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- Mario's Fun Review - Exide Elect. Scammed? - 32bit Access
- AWE 32 SUPER CARD! - People Talking - STR Confidential!

-* ZIFF EMPIRE FOR SALE! *-
-* JUNKIE & SMEG VIRUSES Found! *-
-* ANOTHER DRAM Chip Shortage Predicted! *-

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> From the Editor's Desk "Saying it like it is"

By all rights, and reason I should be somewhat upset with the manner in which certain of our news releases, which appeared in our STR Confidential last week, were rebutted. Instead, its now just another boring "page" in our book of light weight experiences. Further, it might be worthwhile to note a rather inexperienced "sysop's helper" of a major network was suffering from what appeared to be a terminal case of "deletitis" in a message base. He proved to be an embarrassment to all. All in all, its been an interesting week.

Beginning next week, we hope to start a series on modems; the high speed variety. All three major chipset implementations will be looked over. Also, for the summer, we shall be doing a series on true multi-media. That is; from the very start to the finished product. Artwork, scanning, sound, animation and documentation. Stay tuned for more...

The final (or, so we hope) shakeout in the computer marketplace appears to be slowly taking shape. Of course, its obvious the PC in all of its incarnations is clearly going to previal over all the others. Its just a matter of "guessing" when the other platforms will either conform or collapse. The strongest of the "other" platforms is Apple. But they are in the very subtle but definate process of 'conforming' to the spec and the marketplace's demands.

To each and every family out there.... have a wonderful Father's Day!

Ralph....

STReport's Staff

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Publisher -Editor

Ralph F. Mariano

Lloyd E. Pulley, Editor, Current Affairs

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> CPU STATUS REPORT

LATE BREAKING INDUSTRY-WIDE NEWS

IBM/POWER-PC/PC SECTION (I)

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Computer Products Update - CPU Report

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Weekly Happenings in the Computer World

Issue #25

By: Lloyd E. Pulley, Sr.

***** General Computer News *****

** DRAM Chip Shortage Predicted **

Market researchers at Dataquest Inc. looks for a shortage of 16-meg DRAM chips by the end of year. The shortage could be as much as 20% of 1995's first quarter demand.

One reason given for the shortage is the increased demand from the personal computer industry. Worldwide PC sales are expected to grow at 15% for 1994, while U.S. growth rate is expected to approach 16%.

Dataquest further predicts the average memory per desktop PC will rise from 5.5MB in 1993 to nearly 8MB in 1995, and it calls that estimate "conservative."

** IBM Developing Disk Drive Sensor **

IBM Corp. says its scientists have produced a sensor that will give computer hard drives the capability of storing 10 billion bits of data per-square-inch, which is 20 times the current density level.

IBM is calling the sensor a "spin-valve head," noting it is already five times more sensitive than today's best commercially available disk drive sensor.

The computer company explained the new sensor is based on a giant magnetoresistive (GMR) effect, which was discovered less than six years ago. IBM is the first to create a product that utilizes the GMR effect.

** Junkie, 'Smeg' Viruses Formed **

Two new especially virulent computer viruses, "Junkie" and its rela-

tive "Smeg," have been discovered in the United States and as far away as London's financial district.

Sources say that Junkie was discovered last month after an Ann Arbor, Michigan, man bought a new computer for his son. The virus shut down the computer and went undetected until local computer consultant Jim Shaeffer found it using a special program.

Frank Horowitz, an anti-virus software specialist said Shaeffer reported the virus to him.

"This is the first time we've seen this," Horowitz said, "and there are going to be many others like this."

Horowitz said that Junkie is unique because, unlike other viruses, it can attack a diskette, a computer's boot sector or its executable files. (Most other viruses, he said, attack only one of those three crucial areas.)

He added it also is dangerous because standard, scanner-type anti-virus software can't find Junkie. The virus is "polymorphic," meaning it's characteristics are always changing to avoid detection.

Horowitz also found it disturbing that Junkie was found in a new computer, adding the computer might have been infected at the factory.

After Horowitz posted electronic messages about Junkie, the similar Smeg virus was found in computers used by London financial services firms. He added he has received reports from across the country about the new virus but that it is impossible now to tell how far it's spread.

Horowitz said that by breaking Junkie's code he could tell the virus was created this year. The code also contained the virus name, a standard procedure, he said, for vandals who want to know when their creation gets publicity.

** Kodak Unveils Digital Camera **

Eastman Kodak Co. has introduced a new \$11,000 digital camera.

The Kodak Professional DCS 420 Digital Camera joins the company's currently available DCS 200 digital camera. The new product features a full-frame CCD imager that delivers a total resolution of 1.5 million pixels, 36-bit color (with 12 bits per RGB color) and the ability to store images on removable PCMCIA cards (both hard disk and memory devices).

The camera also provides a high-power battery pack that's good for at least 1,000 images per charge, with a recharge time of approximately one hour. A built-in microphone supports image annotation, allowing users to record sound clips before or after exposing an image. Kodak says the camera can be used for desktop publishing, presentation development, catalog publishing, scientific research and a variety of "on location" imaging needs. The camera also will be targeted at a range of military, law enforcement and government applications.

** Dell Cuts Dimension Unit Prices **

Prices on all of Dell Computer Corp.'s Dimension desktop products have been cut by an average of \$200 on standard configurations.

Dell also unveiled its first mini tower systems, the Dell Dimension XPS MT and the Dell Precision MT. These new towers include models with Intel Corp.'s 90MHz Pentium processor.

** New PCs Double as Radios, TVs **

A colorful new brand of PCs that can double as radios and televisions, take telephone messages and send faxes is being unveiled by Packard Bell Electronics Inc.

And did we say "colorful"? Look for the units to eschew the clay-grey of most PCs and come in exotic hues such as teal, azure and sahara.

"This is like adding a tie to a suit," Packard Bell CEO Beny Alagem said.

But it will be the merging of technologies -- radio, TV and phone -- that will attract the most attention. A user can turn on the system's radio or TV with the double-click of a mouse button.

"Control panels come up on the monitor for volume, tone, brightness and other functions," he reports. "The TV picture can be adjusted from the size of an icon to full screen."

Every model Packard Bell is introducing has stereo speakers and nearly every one has a CD-ROM drive as a standard feature. Each comes with 27 software titles, including 11 CD-ROMs.

The computers range in price from \$1,000 to \$3,000, depending on the kind of microprocessor and size of memory and data storage. Packard Bell will sell models based on Intel Corp.'s 80486 and Pentium microprocessors.

** IBM Adds Micro Channel PCs **

IBM Corp. says it's shipping new PS/2 76 and 77 Micro Channel PCs.

The PS/2 76s and 77s are available in a variety of processor configurations and offer Pentium upgradeability.

Processors for the systems include Intel 486SX 33MHz, 486DX2 66/33MHz and 486DX4 100/33MHZ CPUs. IBM says the graphics performance of the PS/2 76s and 77s have been enhanced with the addition of a new VESA SVGA local bus graphics chip incorporated on the system board. Additionally, new PS/2 77 Ultimedia multimedia models offer full- screen, full-motion video using a new system board-based feature called MediaBurst Movie.

The systems also feature IBM's Power on Error Detect function for local area network (LAN) attached systems. The patent-pending feature, used in conjunction with IBM's NetFinity systems management software, alerts a LAN administrator or support staff of power-on errors with detailed error and configuration information from the problem system.

System prices begin at \$2,365.

** Nintendo Taps Canadian Firm for 3-D **

Canadian advanced graphics maker Alias Research Inc. has been tapped to create custom 3-D graphics for Nintendo's 64-bit Project Reality home video game system, a hardware system being developed for Nintendo by Silicon Graphics Inc.

Nintendo America Chairman Howard Lincoln said the multimillion dollar investment brings together the world's leading names in 3-D graphics.

Reports say the cartridge format Project Reality unit, scheduled for introduction in North America and Japan in fall 1995, will carry a suggested \$250 retail price.

** Compression Software Unveiled **

LEAD Technologies of Charlotte, North Carolina, has announced a new data compression utility that can save DOS and Windows software publishers an additional 22% on disk replication costs over previously available compression technologies.

The proprietary data compression algorithm is designed to work with the Microsoft SDK, replacing Microsoft's compression with LEAD's when the user builds the final distribution diskettes. The company says it will modify the utility to work with any install routine at no cost.

"A publisher shipping 10 diskettes with their application should be able to realize a savings of two diskettes per package even if they were previously compressing their install disks with the Microsoft SDK or other existing compression techniques," says LEAD president Rich Little. "If the ten diskettes were shipped in uncompressed format, we can reduce the diskette count to four."

** Aerosmith Comes to CompuServe **

A new song by Aerosmith will be downloadable from CompuServe later this month. It appears to be the first original composition to be distributed via computer by a major record label.

Geffen Records says the song, "Head First," will be available to CompuServe subscribers for a limited time beginning June 27. The Associated Press reports the rock group recorded the song during its recent "Get a Grip" sessions, but left it off the album.

CompuServe and Geffen are describing the venture as an experiment, "the promise of digital delivery of entertainment but also the current limitations of technology. For instance, only owners of a multimedia personal computer with stereo speakers and a large hard drive would find it practical to obtain the song." ("Head First" will be a 4.3MB file.)

Aerosmith is waiving royalties for the song and that CompuServe will not charge for the connect time it takes to download it.

** Airplane' Sues Over Toaster **

Berkeley Systems Inc., which attracted national attention by suing a

competitor over a parody of its Flying Toasters screen saver, now is on the receiving end of a lawsuit. Members of rock group Jefferson Airplane say flying toasters was their idea.

In a statement, Berkeley Systems says it hasn't seen the actual suit, but that it earlier received a letter from The Jefferson Airplane claiming trademark rights and copyrights to the Flying Toasters based on cover art from Airplane's 1973 "30 Seconds Over Winterland" album.

The company has had other toaster scraps. Last year it won its suit over Delrina Technology's parody screen savers.

Of the latest action, Berkeley President Wes Boyd disputed the rockers' claim, saying, "The Flying Toasters in After Dark 2.0 were independently created in 1989. We were completely unaware of the album at the time."

** N.C. Firm Alleges Online Scam **

A North Carolina network peripheral company said it has been victimized by what it terms "an online marketing scam" by an employee of a competitor.

In a statement, Exide Electronics Group Inc., which makes network power management and power protection systems, says the activity "culminated in the publication of a fake user testimonial maligning Exide Electronics in PC Week," a Ziff-Davis Publishing trade magazine.

Exide says the letter to PC Week editors, which "disparaged and grossly misrepresented Exide Electronics' products and services," also was posted "under a false user name" in the PC Week Extra forum operated by Ziff's ZiffNet online service carried on CompuServe.

Says the statement, "The letter was subsequently published in the May 23, 1994, issue of PC Week attributed to 'Name Withheld By Request.' However, the CompuServe identification number for the user name was the same as an employee of a vendor of uninterruptible power systems that competes with Exide Electronics."

Exide says other letters denigrating Exide Electronics under a second false user name also were posted to PC Week's forums under the same User ID number.

> Mario's Fun with Numbers STR Review

MARIO'S FUN WITH NUMBERS

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Kids' Computing Corner

by Frank Sereno

Mario's Fun with Numbers is one of the programs in Software Toolwork's Mario series of educational programs. This particular program is intended for preschoolers ages 2 to 5. Available for IBM compatibles, this DOS program requires a 286 or higher CPU, 640k of ram, a VGA display, a mouse, and a sound card capable of reproducing digitized voices. Fun with Numbers occupies a whopping 10.2 megs of hard drive space. Children learn many math and language concepts during gameplay.

Fun with Numbers main screen shows 10 islands or worlds. Nine of the worlds are games for the child to play, the tenth is the home of Mario and the Princess. The child may choose either Mario or the Princess to be his on-screen persona by clicking on the character. Play begins by clicking on one of the islands. In many of the games, the child must click on Mario's brother Luigi to wake him up to get audible instructions and begin the game.

SINGSONG World is represented by an animal character and some musical notes. Once in SINGSONG World, the child may choose to listen to one of four songs dealing with numbers. These are "This Old Man", "Ten Little Koopas", "One, Two, Buckle My Shoe" and "Five Little Monkeys Jumping on the Bed." The songs are very cute and entertaining. Animated video is presented along with the music showing the activities described in the songs as well as showing the number symbols. In the case of the "Monkeys" animation, it is not in sync with the lyrics of the song.

Number World is represented by an island containing the numbers zero through three. The child's task is to lead Mario to the correct number as called for by the program. On the first level, the numbers are shown in proper sequence above room doors. Mario must pass the numbers on to Luigi at his conveyor belt. At higher levels, numbers are displayed in a random order making it more difficult to find the correct answer. This game will teach the relationship between the number names and symbols.

Counting World is designated by an island containing a pair of gloved hands with the numbers one through ten placed on the corresponding digits. Upon choosing this game, the child will then get to choose between counting items in Mario's bedroom or his kitchen. Various objects in each room can be selected. Move the white cursor around the room and it will turn red when over an interactive object. Clicking on these objects will cause the computer to count the number of each object using the voices of a group of children. The child is encouraged to count along aloud as well. This game will teach counting and numbers.

Comparing World is represented by an island holding three buckets of differing sizes. In this game the child will learn vocabulary by comparing and contrasting items by size, number and position. On the first level, children are asked to compare items based on size as short, long and medium. On the second level, children will compare and choose items based on numerical concepts such as more or pair. On the third level, children will choose items based on the items position relative to other items such as above a shelf or under a branch. These lessons will help a child learn how to better express concepts.

Pattern World is illustrated by a geometric rope on an island. The child makes no on-screen choices in this game, but is encouraged to recite aloud with the computer's chorus as they describe the patterns. Patterns are made in shapes, words, numbers and finally with animals drawn slowly on the screen. In the shapes section, the computerized children will

recite the shapes being placed on the screen such as circle, triangle, circle triangle and then ask the child what will come next. For words, the screen may show a pig with a shovel to create the pattern of "pig-dig". Numbers are counted aloud in normal order and then in twos in both even and odd numbers. Finally, in the animal section the different pictures are drawn on the screen and the child is encouraged to guess the animal from the shape. Then the interior pattern of the animal is drawn, the picture is colored and finally it is animated to leave the screen. This portion is entertaining but unfortunately the same four animals are used over and over and over again.

Categorization and organization are taught in Sorting World. Sorting World is represented by an island containing three watermelon wedges and three cookies. On screen there will be many objects of various geometric shapes, sizes and colors. On the first level, the child must sort the items by shape, on the next level by size, on the succeeding level by color, then another level where sorting is done by color and shape, another level based on size and shape and then the final level asks for the items to be sorted by size, shape and color. I think this part of the program would have been more instructional if it had the child sort more than one category on each screen. For example on the first screen, while several shapes may be represented, the program only asks for the child to find one particular shape, perhaps a triangle. Soon the child will learn of the repetitious nature of the program after the first or second triangle and he will not have to think very much to find the next object as it will be another triangle.

Shape World is indicated by an island holding various colored geometric blocks. The child will learn the four basic shapes of geometry (circle, triangle, square and rectangle) by building trains with these shapes. On the first level the child will be asked merely to find the correct shape, but in higher levels the items asked for will be differentiated by size and color as well as shape. This is a good game for learning colors, sizes and shapes.

Same and Different World is represented by an island with three fish and a shopping cart on it. This game teaches similarities and differences between objects as well as building language skills and vocabulary. Eight levels of gameplay will keep a child entertained. On the first four levels, the child must determine which object is different or unrelated of four objects. On the first level, three objects are identical and one is different. The next level has three objects that are closely related such as a pen, crayon and pencil are all used for writing or drawing. The third level consists of three items which are still related but more abstractly. For example, the objects may be a beach ball, a shell, a sand castle and a car. The car does not belong but the relationship between the other objects takes a bit more thought to find. On the fourth level, three items are part of a whole and the fourth is unrelated. For example, a lamp shade, a bulb and an electrical plug which are parts of a lamp may be shown along with an unrelated hammer. On the next four levels, the object is to find the items that are related and leave the unrelated item by itself. The levels are the same as for finding the different or unrelated item.

Finally we come to the last game, How Many World. It is designated by an island with peanut bags. Children learn the number symbols and names as Mario helps at the zoo. On the first level, Mario must feed the elephant the correct number of peanuts. The computer will ask for a number. On the screen there are several peanut bags with a number symbol beside each one and the corresponding number of peanuts in the bag. On

the next level, the child completes a picture of an animal by adding the requested number of stripes, whiskers, etc. Again the number symbol is placed next to the corresponding number of items. On the third level, three kinds of animals will be shown on the screen in differing numbers with the number symbols displayed. The child will then be asked to choose a specific number of specific animals. For example, there may be five monkeys, two lions and seven zebras and the child will be asked to find seven zebras. Finally the child will be asked to match numbers to the animals that are pictured. The numbers will be represented symbolically and with a corresponding number of dots.

Graphically, this program breaks no new ground. The colors are nice, but some of the characters are a bit blocky. Some of the animations are not smooth enough. On sound, this program uses many excellent digitized sound effects, voices and music but there is a problem. The voice that is used for asking the child to make selections was recorded in one word and short phrase clips that are pieced together to make full sentences. These sentences are not smoothly flowing and do not sound natural. The interface does not allow access to audible help. The child will receive audible instructions on how to play each world when he enters it, but he cannot get help after that point. On the plus side, text help and information is available to the parent by pressing the F1 key. This text help will tell the purpose of each lesson as well as give helpful hints on games to play away from the computer to reinforce the lessons of Fun with Numbers. Playing the games is a simple matter of pointing and clicking with the mouse. This program has a lot of play value as it has many levels of interest for younger children. Most children will come back to this program for many hours of fun. Educational value is quite good as many valuable lessons are taught. I believe this is a good program for its cost. It's available for around \$25.

Graphics	7.00
Sounds	7.00
Interface	8.00
Play Value	8.50
Ed. Value	8.00
Bang for the Buck	8.00
Average	7.75

In this week's mail, I received an offer from TRO Learning, Inc. This offer included a coupon worth \$10 towards the purchase of several Plato mathematics courses which are claimed to offer 258 lessons covering over 925 learning objectives for students from second grade through college studies. I'm going to try to get more information about the available courses and report the information here at a later date. If you wish to investigate on your own, you may contact them at 1-800-44-PLATO (1-800-447-5286) or write them at:

TRO Learning, Inc.
4660 West 77th Street
Minneapolis, MN 55435

Be sure to mention Silicon Times Report as your source for this information. This might influence TRO to send out a review copy to this scribe. As always, I thank you for reading!

> AWE 32 by Sound Blaster STR FOCUS!

AWE 32 Has It ALL!

FREQUENTLY ASKED QUESTIONS FOR SB AWE32

=====

This is a frequently asked question document for the Creative SB AWE32 sound card. This document summarizes many frequently asked questions and answers about the SB AWE32. If you have a question, please check this file before calling Creative Technical Support as you may find the answer contained in this document.

This FAQ is organized into the following sections:

- [A] SB AWE32 in General
- [B] Editing Tools
- [C] Programming Information
- [D] SoundFont(TM) Banks
- [E] Introduction to the EMU8000 chip
- [F] How do I ...
- [G] References
- [H] NRPN Table

Before you continue ...

This document assumes you have a basic understanding of how MIDI works, the different MIDI messages, and how your MIDI sequencer works. If you are not familiar with these topics, please consider consulting a friend who has experience with MIDI, or consulting books on MIDI. A list of recommended reading on MIDI can be found in section G of this document.

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Section A - SB AWE32

1. What is the SB AWE32? How does it differ from the SB16?

The SB AWE32 is a standard SB16 MultiCD with the EMU 8000 Enhanced WavEffect music synthesizer chip. The card includes all the standard SB16 features. Additionally, the SB AWE32 includes the Advanced Signal Processor and multiple interfaces supporting Creative, Mitsumi and Sony CD-ROM drives.

The EMU8000 is a sub-system offering high quality music synthesis using advanced wave effects technology. It comes with an onboard dedicated effect engine. The effect engine provides high quality effects like reverb and chorus to MIDI playback. The EMU8000 supports up to 32 voices, and the effect amount for each voice can be controlled via MIDI.

The EMU8000 comes integrated with 1MB of General MIDI samples and 512KB of DRAM for additional sample downloading. It can address up to 28 MB of external DRAM memory. There are two SIMM sockets on board for DRAM expansion. The SB AWE32 supports General MIDI, Roland GS and Sound Canvas MT-32 emulation.

Note: MT-32 Emulation on the SB AWE32 is similar to that of the Sound Canvas; e.g., MT-32 sysex is not supported.

2. How much memory is shipped with the SB AWE32 card?

The card ships with 1 MB of General MIDI ROM samples and 512 KB of DRAM for user sample downloading. There is a pair of SIMM sockets for DRAM upgrades.

3. What is the recommended SIMM memory access speed?

Hardware specifications call for SIMM modules with 80 nanosecond or better access times.

4. How do I upgrade the memory on the card?

To upgrade the memory, you can purchase standard SIMM modules and insert them into the SIMM sockets provided on the SB AWE32. (If you are not familiar with inserting SIMM modules, check with a technician where you purchased the SIMM's. They should be able to help). You will also need to reconfigure the memory selector jumper on the SB AWE32 card. The SIMM socket on the SB AWE32 were designed to accommodate industry standard 30-pin SIMM modules. You will need to insert two SIMMs of the same memory size into both of the sockets.

The available memory options are:

2 MB (using 2 1 MB SIMMs)
8 MB (using 2 4 MB SIMMs)
32 MB (using 2 16 MB SIMMs)

Note that you cannot mix different size (that is, 2 MB and 8 MB) SIMM modules together on a single SB AWE32 card.

There are also 72 pins SIMM modules on the market. Such SIMMs can be found on motherboards that use 8 or 16 megabit SIMMs or as cache RAM. They are incompatible with the SIMM sockets on the SB AWE32 card. The EMU8000 treats the first 4 MB of its DRAM address space as ROM memory. As a result, when you insert two 16 MB SIMMs onto the SB AWE32, only 28 MB will be addressable.

5. What are the uses of the 512 KB DRAM on the SB AWE32?

The on-board 512 KB of memory is used to hold user samples. In GS synthesizer mode, this 512 KB is used to hold the sound effects of GS. In GM synthesizer mode, the 512 KB DRAM is free, so it can hold SoundFont banks containing samples.

MT-32 Synthesizer mode uses a small portion of the 512 KB of memory, therefore you can still load your own SoundFont bank samples into the rest of the free RAM space.

6. Would adding DRAM to the SB AWE32 increase the performance of WAVE file editing or manipulation?

Addition of SIMM DRAM to the SB AWE32 will allow you to accommodate more SoundFont bank data. This, however, will not increase the performance of WAVE file editing or manipulation as the latter does not make use of the SIMM DRAM on the SB AWE32.

7. Is it possible to use AWE32 sounds (16 channels) together with FM sounds from the OPL-3 chip (16 channels) in CakeWalk?

You can use both the AWE32 sounds AND the OPL-3 FM sounds together in CakeWalk. As both the AWE32 and OPL-3 appear under Microsoft Windows as two separate MIDI devices, you can play both devices simultaneously. The following is a step-by-step guide:

1. Startup CakeWalk.
2. Select "Settings", then "MIDI Devices"
3. You will see a dialog box with MIDI IN devices on the left, and

MIDI OUT devices on the right. Click on both "Sound Blaster AWE32

MIDI Synth" and "Voyetra Super Sapi FM Driver."

4. Select "OK"
5. Activate the "Track/Measure" Window.
6. Locate the "Port" column in the Track/Measure Windows.
7. If you want a track to be playing back using AWE32, double click on the track's "Port" section, and select "1:Sound Blaster AWE32 MIDI Synth." On the other hand if you want the track to be playing back using the OPL-3 then select "2:Voyetra Super Sapi FM Driver."

You can repeat steps 6 and 7 on other CakeWalk tracks to assign the output port as desired.

8. How many MIDI channels can the SB AWE32 handle in Windows?

Under Windows, the SB AWE32 has two MIDI synthesizer devices, "EMU8000" and "OPL3". Each MIDI device is capable of supporting 16 MIDI channels, with 15 being melodic, and one channel (MIDI channel 10) being percussive.

9. What MIDI sequencers will work with SB AWE32? Are special drivers required?

The SB AWE32 package ships with a Windows SB AWE32 MIDI driver. Therefore, the SB AWE32 can be used with any Windows based MIDI sequencer software. For DOS, the sequencer software needs to have native SB AWE32 support.

10. Are there any plans for OS/2 and Windows NT SB AWE32 drivers?

The SB AWE32 OS/2 driver is currently in beta stage. The Windows NT driver is currently in development.

11. What I/O port addresses are used by the EMU8000?

The addresses used by the EMU8000 are relative to the base I/O address of the SB16. EMU8000 Addresses are at 6xxH, AxxH and ExxH. It occupies the first four addresses at each location. For example, if the SB16 base I/O address is 220H, the EMU8000 addresses are 620H-623H, A20H-A23H and E20H-E23H.

12. Why doesn't the EMU8000 have a built in MIDI interpreter?

One of the design goal of the SB AWE32 is to offer high quality music at an affordable price. The EMU8000 is just like any other synthesizer chip such as OPL2, OPL3 or OPL4. It does not have the capability to interpret MIDI commands. For it to understand MIDI commands, a MIDI interpreter is required, and this will involve adding an additional processor to handle MIDI commands and other components adding to the cost of the product.

After our analysis of price and performance, we decided that our current implementation offers the best in terms of price as well as performance.

To support existing games that use MPU-401, we provide a feature known as MIDI feedback using NMI (non-maskable-interrupt) which installs a small TSR program, AWEUTIL. AWEUTIL works by trapping data going out to the MPU-401 port and re-directs it back to the SB AWE32. AWEUTIL provides compatibility with many games that support the MPU-401 interface, but will not always work with protected mode games due to the complicated ways in which DOS extenders handle NMI. Note that you can still continue to play your favorite DOS protected mode game with the on-board OPL3 FM chip.

We are working closely with the game developer community to port their MIDI driver to support the SB AWE32. We have a porting laboratory at Creative Labs, Inc., where we invite developers to port their drivers to natively support the SB AWE32. We believe that in the near future the SB AWE32 will be widely supported. Currently, we already have support from several major audio driver developers for the SB AWE32 platform.

13. Does the SB AWE32 support MIDI Sample Dump to transfer samples to the EMU8000?

No. The sample transfer between PC and SB AWE32 is through the PC bus, and does not dump via the SB AWE32 MIDI port.

14. What is "CC0" documented in Appendix G-4 and G-5 of the SB AWE32 Getting Started Manual? How are these variation tones accessed?

CC0 is short form for Continuous Controller 0 (zero), which is MIDI Bank Change.

The SB AWE32 offers Sound Canvas compatibility by including the user bank instruments found on the Sound Canvas. User bank instruments are simply instruments of a similar class or variation. For example, General MIDI instrument number 25 is the Steel Acoustic Guitar, and its variation is the Ukulele.

A user bank tone is just like any other General MIDI instrument. Take for example the Ukulele variation tone. Lets assume you are currently doing MIDI editing under CakeWalk Apprentice, and you sequenced a track that uses Steel Acoustic Guitar. You play the track back, and feel that the Steel Acoustic Guitar does not quite cut it, so you decide to give Ukulele a try. What you would need to do is to insert a MIDI bank change of value 8 (the user bank for Ukulele) in that track, follow immediately by a program change of Acoustic Value to select the user bank tone. What you have just accomplished is to set the MIDI channel in which the Steel Acoustic Guitar instrument is playing to the user bank instrument "Ukulele."

Note that the user bank instruments are available only in the "GS" mode of the SB AWE32. You can switch to "GS" mode via the Windows AWE Control Panel applet.

15. What "drum kits" are available in GS mode?

A drum kit is a collection of percussive instruments (snare drum, bass drum, hi-hats, etc.) laid across the entire MIDI keyboard. Under General MIDI, MIDI channel 10 is reserved for percussion instruments. General MIDI defines only one drum kit, which is the Standard Kit. Under the "GM" synth mode of the SB AWE32, channel 10 automatically uses the "Standard Kit". MIDI music would be very boring if everybody used the same drum kit in every MIDI song. Imagine all MIDI songs using the same snare drum and the same bass drum, and you will have an idea of how similar every MIDI song will sound.

Under the "GS" synth mode of the SB AWE32 there are 11 (including the Standard Drum Kit) different drum kits you can use on MIDI Channel 10.

These drum kits are:

Name	Program No.	Description
Standard/Jazz	1 or 33	Standard General MIDI drum kit. Jazz is similar to the Standard drum kit.

		kit except that it has more room ambiance.
Power	17	Again similar to that of the Standard kit, but with more power kick and snare drums.
Electronic	25	Electronic drum kit. Most of the percussion instruments in this drum kit are reminiscence of old analogue and digital rhythm machines (such as the Roland TR-707 and TR-909 rhythm machine
TR-808	26	Electronic drum kit, reminiscence of the Roland TR-808 rhythm machine.
Brush	41	Similar to the Standard kit except that brushes have been added. This kit is mostly used for Jazz MIDI pieces.
Orchestra	49	An immense collection of concert drums and timpani.
SFX	57	A collection of Sound Effects.
CM-64/32L	127	Same as the Roland MT-32 drum kit. This drum kit contains standard percussion at the lower range of the keyboard, and sound effects at the higher range of the keyboard.

Drum kits are very easy to access under MIDI. Each drum kit is essentially an instrument and you select a drum kit by selecting an instrument, just as if you would select a melodic instrument. For example, if you want to select the TR-808, all you have to do is to perform a program change to 25 on MIDI channel 10. After the program change, all percussion sounds will be played back through the TR-808 drum kit.

16. Does the SB AWE32 respond to MIDI aftertouch?

The SB AWE32 Windows MIDI driver prior to version 1.03 does not support MIDI aftertouch. The current SB AWE32 driver supports aftertouch AND MIDI controller 11 (expression).

See the item "How do I get the latest drivers for the SB AWE32?" in section F for further information.

17. My PC system does not have a working NMI. What can I do to use AWEUTIL?

One of the most common causes of a system not having a working NMI is that the system's memory parity checking has been turned off. You can check your system's memory parity checking status by activating your system's BIOS setup. Consult your system's user manual on how to

activate BIOS/CMOS setup and memory parity checking.

If your system does not have a working NMI or you have a DOS protected mode game, then you can only play games using FM music. Note that this NMI problem only applies to DOS games or applications, not to Windows games or applications. Under Windows, all applications play music and sound effects through the standard SB AWE32 Windows drivers.

As more developers include native SB AWE32 support, this NMI problem will gradually disappear.

Some of the protected mode games already have SB AWE32 support via special drivers (such as Miles Design Inc's AIL drivers). You can obtain more information on these drivers in the Sound Blaster forum on CompuServe, or on Creative's BBS. See the item "How do I get the latest drivers for the SB AWE32?" in Section F.

18. Is there a WaveBlaster upgrade option on the SB AWE32?

Yes. Each SB AWE32 features a WaveBlaster connector.

19. What is the benefit of adding a WaveBlaster to the SB AWE32?

The WaveBlaster connector was included on the SB AWE32 to provide users an alternative wave-sample synthesis method other than the EMU8000 on the SB AWE32. By incorporating a WaveBlaster onto the SB AWE32, the total polyphony of this combination will be increased to 64, the total number of timbres expanded to 32, and you will have access to a secondary palette of sampled sounds.

20. Is it possible to load AWEUTIL into high memory?

AWEUTIL automatically searches for high memory and will attempt to load itself high if enough high memory is available.

21. Does AWEUTIL have to stay memory resident?

AWEUTIL serves two purposes; to initialize and control the reverb and chorus effects of the FM hardware on the SB AWE32 card, and to provide NMI MIDI Feedback.

AWEUTIL /S

will initialize and set the reverb and chorus effect of the FM hardware, and then terminate. It will not stay resident in memory. If you want to activate NMI MIDI Feedback, then run AWEUTIL /EM:XX (XX = GM, GS or MT32) before starting your game.

When you finish the game, remember to run

AWEUTIL /U

to unload AWEUTIL from memory.

22. What are the long term plans to solve the problem with DOS extender games?

We are currently getting developers to natively support the SB AWE32. So far we have had good support from John Miles Inc. with their SB

AWE32 Miles (real and protected mode) drivers, from Accolade, from HMI and from John Ratcliff with his MIDPAK drivers. As more and more developers support the SB AWE32, the DOS extended game's problem will gradually disappear.

23. Will software written for the SB16 work with the SB AWE32?

Definitely. The SB AWE32 uses the same base system as the SB16, so it is fully compatible.

24. Does Creative have any plans for a SCSI version of the SB AWE32?

We will deliver a SCSI version of the SB AWE32 when there is sufficient demand.

25. What CD-ROM drives does the SB AWE32 support?

The SB AWE32 supports Creative, Sony and Mitsumi CD-ROM drives.

26. What are the different reverb and chorus variations available on the SB AWE32?

Reverb and chorus effects add warmth and movement to MIDI playback. There are eight reverb types and eight chorus types available on the SB AWE32.

Room 1-3, This group of reverb variation simulates the natural ambiance of a room. Room 1 simulates a small room, Room 2 simulates a slightly bigger room, and Room 3 simulates a big room.

Hall 1-2, This group of reverb variation simulates the natural ambiance of a concert hall. It has greater depth than the room variations. Again, Hall 1 simulates a small hall, and Hall 2 simulates a larger hall.

Plate, Back in the old days, reverb effects were sometimes produced using a metal plate, and this type of reverb produces a metallic echo. The SB AWE32's Plate variation simulates this form of reverb.

Delay, This reverb produces a delay, that is, echo effect.

Panning Delay, This reverb variation produces a delay effect that is, continuously panned left and right.

Chorus 1-4, Chorus produces a "beating" effect. The chorus effects are more prominent going from chorus 1 to chorus 4. Feedback Chorus, This chorus variation simulates a soft "swishing" effect.

Flanger, This chorus variation produces a more prominent feedback chorus effect.

Short Delay, This chorus variation simulates a delay repeated in a short time.

Short Delay, This chorus variation simulates a short delay

repeated (feedback) (feedback) many times.

These effect variations can be selected by the following sysex messages:

Reverb sysex macro

F0 41 10 42 12 40 01 30 XX CS F7

where XX denotes the reverb variation to be selected, and CS denote a checksum value that is ignored. The valid values for XX are:

- 0 - Room 1
- 1 - Room 2
- 2 - Room 3
- 3 - Hall 1
- 4 - Hall 2
- 5 - Plate
- 6 - Delay
- 7 - Panning Delay

Chorus sysex macro

F0 41 10 42 12 40 01 38 XX CS F7

again, XX denotes the chorus variation to be selected, and CS notes a checksum value that is ignored. The valid values for XX are:

- 0 - Chorus 1
- 1 - Chorus 2
- 2 - Chorus 3
- 3 - Chorus 4
- 4 - Feedback chorus
- 5 - Flanger
- 6 - Short Delay
- 7 - Short delay (FB)

27. What are the undocumented "JP6," "JP8" and "JP9" jumpers on the card?

JP8 Is a digital (SPDIF) out from the EMU8000.

Pin definition: 0 - signal,
 1 - signal ground.

JP6 and JP9 are meant for manufacture diagnostic purpose, and should not be used by end user.

Section B - Editing Tool

1. Will there be a preset editor for the SB AWE32?

We are currently working on a preset editor for the SB AWE32, code-named "Vienna." Vienna will allow you to create and customize your own SoundFont bank files. You can create WAVE files to import into Vienna to create your own instruments. Vienna also allows you to program your own presets (tweaking the envelopes' generators, the LFOs and such).

2. Will it be possible to patch multiple sounds across different keys, such as a drum kit?

Yes, Vienna was designed for making drum kits as well.

3. How are new instruments on the SB AWE32 created?

As mentioned above, you can create your own samples (using WaveStudio) to import into Vienna. As an example, let's say you have a Steinway piano you would like to sample it and use the Steinway sound on your SB AWE32. What you need to do is sample your Steinway in 16 bit mono WAVE files. Then you can use Vienna to edit its preset and save it as a SoundFont bank file and load it as a user bank into your SB AWE32 to play just like any normal MIDI instrument.

4. What functionality will the preset editor offer?

Here is what you will be able to do with Vienna:

- Multi-sample arrangement

Multi-sampling is the technique of sampling a musical instrument at different musical intervals, arranging the samples across a MIDI keyboard and assigning key ranges (for example, from key C3 to C4) to these samples. Vienna allows you to visually assign samples to key ranges.

- Preset editing

Once you arrange your samples across the keyboard, you can then start to program the instrument's envelopes and LFOs to your liking. Refer to the section on "Introduction to EMU8000" for information on envelopes and LFOs.

- Loop point selection

Vienna allows you to visually select the loop points of a sample.

- Drum kit arrangement

Vienna is not limited to just creating musical instruments; you can also layout and save a drum kit using any samples you desire.

5. What is SoundFont Bank Maker for SB AWE32? How do I get this application?

SoundFont bank Maker for SB AWE32 is a simple utility for you to experiment with SB AWE32 sample downloading capability. It is not a substitute for Vienna. Refer to the section "How do I..." for more information on obtaining this utility.

6. Will the bank editing software load samples for other systems e.g. Akai S1000 or Yamaha TG55?

There are no plans at this time.

1. Is programming information available for the SB AWE32?

We are working on a SB AWE32 Developer Information Pack, which will contain both Windows and DOS programming information. For DOS environments, we have created library functions based on common MIDI commands such as NoteOn, NoteOff, ProgramChange, etc. Special care has been taken to ensure that the library can be used for building TSR drivers or embedded MIDI drivers in an application.

For Windows environments, we will provide the API for sample downloading and effect control.

2. Is the effect engine on the SB AWE32 programmable?

The effect engine on the SB AWE32 is dedicated to produce reverb, chorus and QSound effect, and is not intended to be programmable. You can, however, select different reverb or chorus variations using sysex. Refer to the section "What are the different reverb and chorus variations available on the SB AWE32?" for more information.

3. When will the developer kit become available? What sort of prices will the developer kit be?

There will not be a SB AWE32 developer kit available for sale. Once the Developer Information Pack is ready, we will make it publicly available for free. Keep a look out in Compuserve and Creative BBS for SB AWE32 developer kit announcement.

Section D - SoundFont Bank

1. What are SoundFont Collections?

E-mu SoundFont Collections are CD-ROMs that contains SoundFont Banks of varying sizes (0.5 MB to 8 MB). E-mu's SoundFont Banks will include both instruments and sound effects. Many of E-mu's traditional instrument sounds will be included (for example Proteus 1-3) as well as some new sounds.

2. How do SoundFont Bank work?

SoundFont Banks can be loaded into RAM on the SB AWE32. They can then be used in conjunction with a MIDI sequencer to create soundtracks or other kinds of audio creations.

3. When will SoundFont Bank be available?

SoundFont Banks will be available this summer. SoundFont catalogs should be available in June, and E-mu will start taking orders once the catalog is available.

4. What can I do with SoundFont Banks?

You can:

- a. Load SoundFont banks of your choice into the RAM of your SB AWE32 and use this set of sounds as you compose with a MIDI sequencer.

- b. Create your own SoundFont Bank with SoundFont Objects from various SoundFont Banks you already have using E-mu's SoundFont Editor software.
- c. Edit individual SoundFont parameters with E-mu's SoundFont Editor to create your own version of the sounds and then assemble your own SoundFont Objects into a SoundFont Bank. Creating your own SoundFont Objects and Banks gives you the freedom to create your own unique instruments and sound effects to differentiate your soundtracks.

5. Will having 28 MB on the SB AWE32 improve the sound quality over a standard 512 KB SB AWE32?

Absolutely! The more RAM memory on your SB AWE32 the larger and fuller the sound samples you can include in your SoundFont Banks. E-mu will be providing 8 MB of SoundFont Banks in our collection that will be of interest to serious musicians.

Section E - Introduction to the EMU8000 Chip

The EMU8000 has its roots in E-mu's Proteus sample playback modules and their renowned Emulator sampler. The EMU8000 has 32 individual oscillators, each playing back at 44.1 kHz. By incorporating sophisticated sample interpolation algorithms and digital filtering, the EMU8000 is capable of producing high fidelity sample playback.

The EMU8000 has an extensive modulation capability using two sine-wave LFO's (Low Frequency Oscillator) and two multi-stage envelope generators.

1. What exactly does modulation mean?

Modulation means to dynamically change a parameter of an audio signal, whether it be the volume (amplitude modulation, or tremolo), pitch (frequency modulation, or vibrato) or filter cutoff frequency (filter modulation, or wah-wah). To modulate something we would require a modulation source, and a modulation destination. In the EMU8000, the modulation sources are the LFOs and the envelope generators, and the modulation destinations can be the pitch, the volume or the filter cutoff frequency.

The EMU8000's LFOs and envelope generators provide a complex modulation environment. Each sound producing element of the EMU8000 consists of a resonant low-pass filter, two LFOs, in which one modulates the pitch (LFO2), and the other modulates pitch, filter cutoff and volume (LFO1) simultaneously. There are two envelope generators; envelope 1 contours both pitch and filter cutoff simultaneously, and envelope 2 contours volume. The output stage consists of an effects engine that mixes the dry signals with the Reverb/chorus level signals to produce the final mix.

2. What are the EMU8000 sound elements?

Each of the sound elements in an EMU8000 consists of the following:

Oscillator

An oscillator is the source of an audio signal.

Low Pass Filter

The low pass filter is responsible for modifying the timbres of an instrument. The low pass filter's filter cutoff values can be varied from 100 Hz to 8000 Hz. By changing the values of the filter cutoff, a myriad of analogue sounding filter sweeps can be achieved. An example of a GM instrument that makes use of filter sweep is instrument number 87, Lead 7 (fifths).

Amplifier

The amplifier determines the loudness of an audio signal.

LFO1

An LFO, or Low Frequency Oscillator, is normally used to periodically modulate, that is, change a sound parameter, whether it be volume (amplitude modulation), pitch (frequency modulation) or filter cutoff (filter modulation). It operates at sub-audio frequency from 0.042 Hz to 10.71 Hz. The LFO1 in the EMU8000 modulates the pitch, volume and filter cutoff simultaneously.

LFO2

The LFO2 is similar to the LFO1, except that it modulates the pitch of the audio signal only.

Resonance

A filter alone would be like an equalizer, making a bright audio signal duller, but the addition of resonance greatly increases the creative potential of a filter. Increasing the resonance of a filter makes it emphasize signals at the cutoff frequency, giving the audio signal a subtle "wah-wah," that is, imagine a siren sound going from bright to dull to bright again periodically.

LFO1 to Volume (Tremolo)

The LFO1's output is routed to the amplifier, with the depth of oscillation determined by LFO1 to Volume. LFO1 to Volume produces tremolo, which is a periodic fluctuation of volume. Lets say you are listening to a piece of music on your home stereo system. When you rapidly increase and decrease the playback volume, you are creating tremolo effect, and the speed in which you increases and decreases the volume is the tremolo rate (which corresponds to the speed at which the LFO is oscillating). An example of a GM instrument that makes use of LFO1 to Volume is instrument number 45, Tremolo Strings.

LFO1 to Filter Cutoff (Wah-Wah)

The LFO1's output is routed to the filter, with the depth of oscillation determined by LFO1 to Filter. LFO1 to Filter produces a periodic fluctuation in the filter cutoff frequency, producing an effect very similar to that of a wah-wah guitar (see resonance for a description of "wah-wah") An example of a GM instrument that makes use of LFO1 to Filter Cutoff is instrument number 19, Rock Organ.

LFO1 to Pitch (Vibrato)

The LFO1's output is routed to the oscillator, with the depth of oscillation determined by LFO1 to Pitch. LFO1 to Pitch produces a periodic fluctuation in the pitch of the oscillator, producing a vibrato effect. An example of a GM instrument that makes use of LFO1 to Pitch is instrument number 57, Trumpet.

LFO2 to Pitch (Vibrato)

The LFO1 in the EMU8000 can simultaneously modulate pitch, volume and filter. LFO2, on the other hand, modulates only the pitch, with the depth of modulation determined by LFO2 to Pitch. LFO2 to Pitch produces a periodic fluctuation in the pitch of the oscillator, producing a vibrato effect. When this is coupled with LFO1 to Pitch, a complex vibrato effect can be achieved.

Volume Envelope

The character of a musical instrument is largely determined by its volume envelope, the way in which the level of the sound changes with time. For example, percussive sounds usually start suddenly and then die away, whereas a bowed sound might take quite some time to start and then sustain at a more or less fixed level.

A six-stage envelope makes up the volume envelope of the EMU8000. The six stages are delay, attack, hold, decay, sustain and release. The stages can be described as follows:

Delay, The time between when a key is played and when the attack phase begins.

Attack, The time it takes to go from zero to the peak (full) level.

Hold, The time the envelope will stay at the peak level before starting the decay phase.

Decay, The time it takes the envelope to go from the peak level to the sustain level.

Sustain, The level at which the envelope remains as long as a key is held down.

Release, The time it takes the envelope to fall to the zero level after the key is released.

Using these six parameters can yield very realistic reproduction of the volume envelope characteristics of many musical instruments.

Pitch and Filter Envelope

The pitch and filter envelope is similar to the volume envelope in that it has the same envelope stages. The difference between them is that whereas the volume envelope contours the volume of the instrument over time, the pitch and filter envelope contours the pitch and filter values of the instrument over time. The pitch envelope is particularly useful in putting the finishing touches in simulating a natural instrument. For example, some wind instruments tend to go slightly sharp when they are first blown, and this characteristic can be simulated by setting up a pitch envelope with a fairly fast attack and decay. The filter envelope, on the other hand, is useful in creating synthetic sci-fi sound textures. An example of a GM instrument that makes use of the filter envelope is instrument number 86, Pad 8 (Sweep).

Pitch/Filter Envelope Modulation

These two parameters determine the modulation depth of the pitch and filter envelope. In the wind instrument example above, a small

amount of pitch envelope modulation is desirable to simulate its natural pitch characteristics. This rich modulation capability of the EMU8000 is fully exploited by the SB AWE32 MIDI drivers. The driver also provides you with a means to change these parameters over MIDI in real time. Refer to the section "How do I change an instrument's sound parameter in real time" for more information.

Section F - How Do I ...

1. How do I make use of RPN documented in the SB AWE32 MIDI Implementation chart?

RPN is a short form for "Registered Parameter Number." Registered Parameter Numbers are used to represent sound or performance parameters. MIDI 1.0 specified three RPNS: RPN 0 for Pitch Bend Sensitivity, RPN 1 for Coarse Tune and RPN 2 for Fine Tune. The SB AWE32 implements only RPN 0, Pitch Bend Sensitivity.

Before going into how to set pitch bend sensitivity, let's go into how pitch bending is used in MIDI. Pitch Bending is normally used to pitch shift (that is, make the pitch go higher or lower) a sustained note to achieve a "pitch gliding" effect. The default pitch bend sensitivity of the SB AWE32 is +/- 2 semitones, that is, you can go high or low of the current note by 2 semitones when using the pitch bend wheel. If you desire a more dramatic pitch bending effect, then you would need to change the pitch bend sensitivity to a higher value.

Following are step-by-step instructions to set a pitch bend sensitivity value other than the default 2 semitones. CakeWalk Apprentice will be used as an example.

1. Bring up the "Event List" window for the track you want to set pitch bend sensitivity.
2. Go to the top of the event list (page up) and insert a MIDI controller event, with controller number 101 and a controller value of 0.
3. Insert another MIDI Controller event immediately, with controller number 100 and controller value of 0.
4. Insert another MIDI controller event immediately, with controller number 6, and set the controller value to the desired pitch bend sensitivity in semitones.

2. How do I change an instrument's sound parameter in real time?

You can change an instrument's SoundFont parameters (for example, LFO depth and speed, envelope contour) through MIDI in real time via NRPN, or Non Registered Parameter Number control.

NRPN is identical to that of RPN, except that Registered Parameter Numbers are agreed upon by the MMA (MIDI Manufacturers Association) and JMSC (Japan MIDI Standards Committee), and Non Registered Parameter Number may be assigned as needed by individual manufacturers.

NRPN consists of:

NRPN MSB	MIDI Controller 99
NRPN LSB	MIDI Controller 98

NRPN MSB and LSB form a value that indicates the desired sound parameter. After sending NRPN MSB and LSB, MIDI controllers 6 (Data Entry MSB) and 38 (Data Entry LSB) are sent to pass in the value for the sound parameter.

To send a NRPN message, the following steps are required:

```
send NRPN MSB with MSB of sound parameter
send NRPN LSB with LSB of sound parameter
send Data Entry MSB with MSB of sound parameter value
send Data Entry LSB with LSB of sound parameter value
```

As NRPN and Data Entry messages are MIDI controller messages, any MIDI sequencer software that supports editing of controller message (such as CakeWalk, MasterTracks Pro) is capable of sending them.

For SB AWE32 NRPN to be functional, NRPN MSB has to be 127, and NRPN LSB set to the desired parameter to be controlled (refer to the section "SB AWE32 NRPN Implementation" for a list of NRPN implemented on the SB AWE32.)

Data entry MSB with Data entry LSB together forms a 14bit number. The middle value 8192 (0x2000, Data MSB = 64 and Data LSB = 0) is taken as value 0. To convert from MSB and LSB to actual value, here is the equation:

$$\text{Actual value} = (\text{MSB} * 128 + \text{LSB}) - 8192$$

To convert an actual value into MSB and LSB, here are the steps:

$$\begin{aligned}\text{MSB} &= (\text{actual value} + 8192) / 128 \\ \text{LSB} &= (\text{actual value} + 8192) \% 128\end{aligned}$$

A "Reset All Controllers" message (MIDI controller 121) restores the instrument's original SoundFont parameters.

Refer to section [H] for a table of NRPN implementation.

3. How do I select the SB AWE32's reverb and chorus variation type through MIDI?

You can select the reverb and chorus variation via sysex. The SB AWE32Windows (not DOS) driver recognizes two strings of sysex; one for selecting reverb variation, and the other for selecting chorus variation.

Reverb sysex string:

F0 41 10 42 12 40 01 30 XX CS F7

Where XX indicates the reverb variations (from 0 to 7), and CS indicate a checksum for this sysex string. CS is ignored by the MIDI driver.

Chorus sysex string:

F0 41 10 42 12 40 01 38 XX CS F7

Where XX indicates the chorus variation (from 0 to 7), and CS indicate a checksum for this sysex string. CS is ignored by the MIDI driver.

4. How can I maximize my system's memory so that I still have plenty of room to run games after installing the SB AWE32?

There are two drivers (CTMMSYS.SYS and CTSB16.SYS) you can remove from CONFIG.SYS. These two drivers provide digital playback and recording interface under DOS. They are not used by the EMU8000 subsystem. By removing these two drivers, you will not be able to run PLAY.EXE, RECORD.EXE and SB16SET.EXE under DOS, but you will gain approximately 30K of memory.

5. How do I load a SoundFont Bank?

Loading SoundFont Banks is easy. Just use the SB AWE32 Windows Control Panel Applet, AWECP.EXE, as follows:

- a. Use the up or down arrow keys next to the user bank number to select the desired bank. A dialog box appears.
- b. Select the directory that contains the *.SBK files.
- c. Double-click the desired file to load it into the particular user bank.

6. How do I get the latest drivers for the SB AWE32?

The latest SB AWE32 drivers, utilities and game compatibility list can be found at the following sites:

Inside U.S.A., Canada and South America
Creative Labs, Inc BBS : (405)742-6660

Inside Europe
UK BBS : (44)743-360287
Germany BBS : (49)2131-919820

Inside Asia
Creative Technology BBS : (65)776-2423

CompuServe
type GO BLASTER to enter the Creative Labs Forum

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Section G - References

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The definitive guide to MIDI would be "MIDI 1.0 Detailed Specification", published and distributed exclusively by :

International MIDI Association
23634 Emelita Street
Woodland Hills, CA 91367
USA

Other MIDI related publications are :

Music Through MIDI

Using MIDI to create your own electronic music system by Michael Boom
published by Microsoft Press

Catalog number : ISBN 1-55615-0260-1

The MIDI Manual

by David Miles Huber

published by SAM

Catalog number : ISBN 0-672-22755-6

Section H - SB AWE32 NRPN Implementation

NRPN LSB 0 (Delay before LFO1 starts)

Realtime : No

Range : [0, 5900]

Unit : 4 milliseconds

Delay from 0 to 22 seconds.

NRPN LSB 1 (LFO1 Frequency)

Realtime : Yes

Range : [0, 127]

Unit : 0.084Hz

LFO1 frequency from 0Hz to 10.72 Hz.

NRPN LSB 2 (Delay before LFO2 starts)

Realtime : No

Range : [0, 5900]

Unit : 4 milliseconds

Delay from 0 to 22 seconds.

NRPN LSB 3 (LFO2 Frequency)

Realtime : Yes

Range : [0, 127]

Unit : 0.084Hz

LFO2 frequency from 0Hz to 10.72 Hz.

NRPN LSB 4 (Envelope 1 delay time)

Realtime : No

Range : [0, 5900]

Unit : 4 milliseconds

Envelope 1 Delay from 0 to 22 seconds.

NRPN LSB 5 (Envelope 1 attack time)

Realtime : No

Range : [0, 5940]

Unit : Milliseconds

Envelope 1 attack time from 0 to 5.9 seconds.

NRPN LSB 6 (Envelope 1 hold time)

Realtime : No

Range : [0, 8191]

Unit : Milliseconds

Envelope 1 hold time from 0 to 8 seconds.

NRPN LSB 7 (Envelope 1 decay time)
Realtime : No
Range : [0, 5940]
Unit : 4 Milliseconds
Envelope 1 decay time from 0.023 to 23.7 seconds.

NRPN LSB 8 (Envelope 1 sustain level)
Realtime : No
Range : [0, 127]
Unit : 0.75dB
Envelope 1 sustain level from full level down to off (0.75 dB step).

NRPN LSB 9 (Envelope 1 release time)
Realtime : No
Range : [0, 5940]
Unit : 4 milliseconds
Envelope 1 release time from 0.023 to 23.7 seconds.

NRPN LSB 10 (Envelope 2 delay time)
Realtime : No
Range : [0, 5900]
Unit : 4 milliseconds
Envelope 2 Delay from 0 to 22 seconds.

NRPN LSB 11 (Envelope 2 attack time)
Realtime : No
Range : [0, 5940]
Unit : Milliseconds
Envelope 2 attack time from 0 to 5.9 seconds.

NRPN LSB 12 (Envelope 2 hold time)
Realtime : No
Range : [0, 8191]
Unit : Millisecond
Envelope 2 hold time from 0 to 8 seconds.

NRPN LSB 13 (Envelope 2 decay time)
Realtime : No
Range : [0, 5940]
Unit : 4 milliseconds
Envelope 2 decay time from 0.023 to 23.7 seconds.

NRPN LSB 14 (Envelope 2 sustain level)
Realtime : No
Range : [0, 127]
Unit : 0.75dB
Envelope 2 sustain level from full level down to off.

NRPN LSB 15 (Envelope 2 release time)
Realtime : No
Range : [0, 5940]
Unit : 4 milliseconds
Envelope 2 release time from 0.023 to 23.7 seconds.

NRPN LSB 16 (Initial Pitch)
Realtime : Yes
Range : [-8192, 8191]
Unit : cents
Pitch tuning between -8192 and 8191 cents.

NRPN LSB 17 (LFO1 to Pitch)
Realtime : Yes
Range : [-127, 127]
Unit : 9.375 cents

If data value is greater than 0, this will cause a positive (from 0 to maximum) 1 octave shift at LFO peak. On the other hand, if data value is smaller than 0, this will cause a negative (from 0 to minimum) 1 octave shift at LFO peak.

NRPN LSB 18 (LFO2 to Pitch)
Realtime : Yes
Description :
Range : [-127, 127]
Unit : 9.375 cents

If data value is greater than 0, this will cause a positive (from 0 to maximum) 1 octave shift at LFO peak. On the other hand, if data value is smaller than 0, this will cause a negative (from 0 to minimum) 1 octave shift at LFO peak.

NRPN LSB 19 (Envelope 1 to Pitch)
Realtime : No
Range : [-127, 127]
Unit : 9.375 cents

If data value is greater than 0, this will cause a positive (from 0 to maximum) 1 octave shift at envelope peak. On the other hand, if data value is smaller than 0, this will cause a negative (from 0 to minimum) 1 octave shift at envelope peak.

NRPN LSB 20 (LFO1 to Volume)
Realtime : Yes
Range : [0, 127]
Unit : 0.1875 dB

Data values smaller than 64 causes a positive phase (from 0 to maximum) volume modulation via LFO1 with magnitude of 12 dB at LFO peak. On the other hand, data values greater than or equal to 64 causes a negative phase (from 0 to minimum) volume modulation via LFO1 with magnitude of 12 dB at LFO peak.

NRPN LSB 21 (Initial Filter Cutoff)
Realtime : Yes
Range : [0, 127]
Unit : 62Hz
Filter cutoff from 100Hz to 8000Hz

NRPN LSB 22 (Initial Filter Resonance Coefficient)
Realtime : No
Range : [0, 127]

The EMU8000 has a built in resonance coefficient table comprising 16 entries. Values 0-7 will select the first (0) entry, values 8-15 selects the second (1) entry and so on.

Coeff	Low Fc(Hz)	Low Q(dB)	High Fc(kHz)	High Q(dB)	DC Att(dB)
0	92	5	Flat	Flat	- 0.0
1	93	6	8.5	0.5	- 0.5

2	94	8	8.3	1	- 1.2
3	95	10	8.2	2	- 1.8
4	96	11	8.1	3	- 2.5
5	97	13	8.0	4	- 3.3
6	98	14	7.9	5	- 4.1
7	99	16	7.8	6	- 5.5
8	100	17	7.7	7	- 6.0
9	100	19	7.5	9	- 6.6
10	100	20	7.4	10	- 7.2
11	100	22	7.3	11	- 7.9
12	100	23	7.2	13	- 8.5
13	100	25	7.1	15	- 9.3
14	100	26	7.1	16	- 10.1
15	100	28	7.0	18	- 11.0

NRPN LSB 23 (LFO1 to Filter Cutoff)

Realtime : Yes
 Description :
 Range : [0, 127]
 Unit : 56.25 cents

Data values smaller than 64 causes a positive phase (from 0 to maximum) filter modulation via LFO1 with magnitude of 3 octaves at LFO peak. On the other hand, data values greater than or equal to 64 causes a negative phase (from 0 to minimum) filter modulation via LFO1 with magnitude of 3 octaves at LFO peak.

NRPN LSB 24 (Envelope 1 to Filter Cutoff)

Realtime : No
 Description :
 Range : [-127, 127]
 Unit : 56.25 cents

Data values greater than 0 cause a positive phase (from 0 to maximum) filter modulation via Envelope 1 with magnitude of 6 octaves at envelope peak. On the other hand, values smaller than 0 cause a negative phase (from 0 to minimum) filter modulation via Envelope 1 with magnitude of 6 octaves at envelope peak.

NRPN LSB 25 (Chorus Effects Send)

Realtime : No
 Range : [0, 255]

Chorus send, with 0 being the driest (no chorus effects processing), and 255 being the wettest (full chorus effect processing).

NRPN LSB 26 (Reverb Effects Send)

Realtime : No
 Range : [0, 255]

Reverb send, with 0 being the driest (no reverb effects processing), and 255 being the wettest (full reverb effect processing).

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Inside U.S.A., Canada and South America, contact:

Creative Labs, Inc. Technical Support
 1523 Cimarron Plaza,

Stillwater, OK 74075 U.S.A.
TEL (405) 742-6622
FAX (405) 742-6633
BBS (405) 742-6660

Operating Hours (U.S.A. Central Time)
Mon-Sun 8:00am-12:00am (16 hours)
Public Holiday Closed
BBS 24 hours operational

Inside Europe, contact:

Creative Labs (IRELAND) Ltd. Technical Support
Blanchardstown Industrial Park,
Blanchardstown, Dublin 15, IRELAND

Ireland
TEL (353) 1-820-7555
FAX (353) 1-820-5052

France
TEL (33) 1.39.20.04.21

UK
TEL (44) 734-344744
BBS (44) 743-360287

Germany
TEL (49) 2131-102838
BBS (49) 2131-919820

Note: Inside Europe, please direct all faxes to Ireland.

Inside Asia, contact:

Creative Technology Ltd. Technical Support
67 Ayer Rajah Crescent #03-18
Singapore 0513

TEL (065) 870-0433
FAX (065) 773-0353
BBS (065) 776-2423

Operating Hours (Singapore Time)
Mon-Fri 9:00am-6:00pm
Sat 9:00am-1:00pm
Sun & Public Holiday Closed
BBS 24 hours operational

CompuServe: (type) GO BLASTER
Internet E-mail address: 72662.1602@compuserve.com

Introduction
=====

Microsoft has added many performance enhancements to Windows since its initial release. One of these enhancements has been the 32-bit Disk Access feature. Many people use this feature without actually knowing what it does and without actually knowing if it really helps! Microsoft has since extended this feature and has now implemented 32-bit File Access as well. There have been several questions on exactly what 32-bit disk access is, inside of Microsoft Windows 3.1 and also 32-bit file access now available in Microsoft Windows for Workgroups 3.11. This document will explain the definition of each feature in detail along with performance results when using 32-Bit File Access.

32-Bit Disk Access
=====

The 32-Bit Disk Access feature of Windows, also know as FastDisk, was first introduced with Windows 3.1. It brought new technology to users of the Windows operating system and delivered improved performance over Windows 3.0 when running DOS based applications under Windows.

32-Bit Disk Access is a set of protected-mode device drivers that work together to direct INT13 calls to the hard disk controller and direct them in the most efficient way for the system - either through the 32-bit interface with the hard disk controller or through the system BIOS.

Since 32-Bit Disk Access works directly with the hard disk controller, it can only support a disk controller that supplies an appropriate virtual device driver to support that controller. Windows 3.1 ships with one such device WDCTRL which supports only disk controllers that are compatible with the Western Digital 1003 controller interface standard. Most IDE drives fall under this standard however SCSI drives do not. Some SCSI controller manufactures have decided to develop their own 32-Bit Disk Access drivers but Adaptec has decided not to for reasons explained later.

32-Bit Disk Access is only available under 386 Enhanced mode. In Enhanced mode, Windows and Windows applications run in protected mode whereas DOS programs run in real or virtual mode. The system must switch to virtual mode whenever a DOS program is executed from within Windows. This mode switching is time consuming. The following is the process that takes place while running a DOS application from within Windows. When a DOS application makes a call to read from a file, Windows traps this interrupt (INT21) and switches to protected mode, where several virtual devices check the call for actions they need to perform. Once the call is checked, Windows returns the call back to DOS, switching back to virtual mode. DOS finds the requested location on the disk and generates an INT13 call to the disk controller BIOS.

Again, Windows traps this interrupt, switches to protected mode, checks the call, and returns the INT13 call to the controller BIOS which is in virtual mode. The BIOS then performs the function on the disk and returns from the call. At this point Windows switches back to protected mode to perform more processing, then returns back to virtual mode to let DOS see the return from the original INT21 call.

Here are the steps that take place during a DOS application call to the disk.

1. Application - INT21 call to read from the disk
2. Windows - Traps the call, switch to protected mode
3. Windows - Returns to DOS, switch to virtual mode
4. DOS - INT13 call to disk controller
5. Windows - Traps the call, switch to protected mode
6. Windows - Returns to BIOS, switch to virtual mode
7. BIOS - Performs INT13 function call
8. Windows - Traps the return, switch to protected mode
9. Windows - Returns to DOS the result, switch to virtual mode
10. DOS - Receives the result, supplies the result to application
11. Windows - Traps the return from DOS, switch to protected mode
12. Windows - Returns result to application, switch to virtual mode
13. Application - Application receives the result from the original INT21 call

Many things happen during a simple call to read from a disk! As you can see, Windows switches from virtual mode to protected mode and back again many times which can be very time consuming. This is where 32-Bit Disk Access is applied. The 32-Bit Disk Access driver replaces the Disk controller BIOS. The 32-Bit Disk driver can perform all of its functions from within protected mode. From the steps shown above, you can see that with the 32-Bit Disk driver, you can eliminate steps 6 and 8, a savings of at least two mode switches per disk request.

Another function of the 32-Bit Disk Access driver is to supply multiple non-Windows applications with virtual memory. Without 32-Bit Disk Access, Windows needs to provide non-Windows DOS applications physical memory only. Virtual memory is also known as the Windows swap file and is used when there is not enough actual memory for the application.

So, the times you benefit most from the use of the 32-Bit Disk Access driver are when you are running Non-Windows DOS applications and you don't have much physical memory and must use the swap file. Benchmark programs under Windows that don't execute DOS programs or don't use the swap file, will not show any performance improvement when using 32-Bit Disk Access.

32-Bit File Access

Windows for Workgroups 3.11 extends the 32-Bit Disk Access to provide 32-Bit File Access as well. 32-Bit File Access provides a 32-bit code path for Windows to access and manipulate information on disk by intercepting the DOS INT21 services in protected mode, rather than handling the INT21 services in virtual mode by DOS.

INT21 services manipulate the DOS File Allocation Table (FAT), which governs the way information is written to and read from a FAT-based disk volume. In addition to protected mode INT21 services, 32-Bit File Access also provides a 32-bit protected mode replacement for DOS based disk cache programs such as SmartDrv. The 32-Bit File Access functionality provided in Windows 3.11 is implemented as two Windows virtual device drivers, VFAT.386 and VCACHE.386.

The requirements for 32-Bit File Access are different from that of 32-Bit Disk Access. 32-Bit Disk Access intercepts INT13 calls destined for the disk controller BIOS that communicates with the hard disk. 32-Bit File

Access intercepts DOS INT21 calls which manipulate information stored on a disk device. The VFAT virtual device provides support for the protected mode INT21 services. In order for VFAT to load on a given disk volume, one of the following conditions must be true.

1. A 32-Bit Disk driver is used, or
2. The real mode mapper is installed (supplied with Windows 3.11) to provide a 32-bit Disk Access interface to the DOS device driver chain.

In order for VFAT to mount on disk volumes, VFAT must see a 32-Bit Disk Access interface for a given disk volume. A special virtual device driver called the real-mode mapper (RMM.D32) provides a mapping service to take protected mode file I/O calls from VFAT and sends them through the DOS device driver chain (in our case ASPI). The real-mode mapper is installed by the Virtual Memory dialog box in Windows automatically when 32-Bit File Access is enabled. This will be the method used when an Adaptec Host Adapter is installed.

With VFAT there are only two mode transitions to process an INT21 request from a DOS-Based application and only one mode transition when processing an INT21 request from a Windows-Based application.

A companion driver to VFAT is VCACHE. VCACHE provides a 32-bit protected-mode replacement for the DOS based SmartDrv disk cache program. Where VFAT is responsible for reading and writing information to the disk, VCACHE is responsible for managing the information VFAT writes to or is present in the cache. The caching routines provided as parts of 32-Bit File Access differ from that offered by SmartDrv in the following ways:

32-Bit File Access caching routines are implemented as 32-bit protected mode code, thus reducing the need to transition to real mode to cache disk information

32-Bit File Access read-ahead routines work on a per-file basis rather than on a per-sector basis, thus helping to ensure that information read into the disk cache will be used with a higher probability.

32-Bit File Access caching routines share cache memory with the protected-mode network redirector (VREDIR.386), thus reducing the extra memory overhead for maintaining multiple cache buffers.

32-Bit File Access caching routines cache information on a per-file basis providing improved performance over SmartDrv, which caches on a contiguous sector basis.

Performance Results

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The tests were run on a 486-66 MHz system with 16MB RAM. The SCSI subsystem consisted of a 1540C and a Maxtor 540S hard drive. The benchmark used was WinBench 4.0 and the tests run were the Disk WinMark and Disk Tests. Comparisons were between running Windows for Workgroups 3.11 with 32-Bit File Access turned off and with it turned on.

Performance Summary

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It is interesting to note that while 32-Bit File Access gives you substantial improvement during Random Read/Writes and Sequential Writes, it gives you less performance during Sequential Reads! When using a disk cache such as SmartDrv or VCACHE the majority of your disk access will be Sequential Reads. However, WinBench weighs the results differently and gives a WinMark disk mix score of 354KB/Sec with 32-File Disabled and 1080KB with 32-Bit File Enabled. The individual scores as well as the overall score should both be noted when comparing performance results.

Conclusion

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Windows disables both 32-bit Disk Access and 32-bit File Access by default. Some computers such as laptops, notebooks, and systems that use INT13 to detect disk access for power conservation, will not properly identify when the 32-bit Disk Access driver is accessing the hard disk. If the hard disk powers down in the middle of a write or read action, data loss may result. As with 32-Bit Disk Access, the 32-Bit File Access feature is disabled by default when Windows for Workgroups 3.11 is installed. Both 32-Bit Disk and 32-Bit File Access can be enabled through the 386 Enhanced dialog box.

The benefits you might gain from having 32-Bit Access enabled will depend entirely on your individual configuration and environment. Performance will vary from machine to machine. If you encounter problems, or a decrease in performance, simply turn off 32-bit Access through the 386 Enhanced dialog box. If you don't enable 32-bit File Access, be sure to continue using SmartDrive to provide disk caching functionality.

:HOW TO GET YOUR OWN GENIE ACCOUNT:

Set your communications software to Half Duplex (or Local Echo)

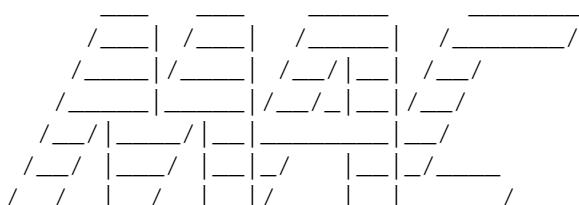
Call: (with modem) 800-638-8369.

Upon connection type HHH (RETURN after that).

Wait for the U#= prompt.

Type: XTX99587,CPUREPT then, hit RETURN.

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*** STReport available in MAC RT ***
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for ALL GENie users!

MAC/APPLE SECTION (II)

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John Deegan, Editor (Temp)

> Politically Correct Computers? STR Feature

POLITICALLY CORRECT COMPUTERS

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From the Jerry Pournelle RT on GENie

The news is out folks (okay, it's still a rumor officially.)

FLEX will be adopting the new terminology standard suggested by Windows Sources in their latest June issue. The Bureau for Avoiding Lexically Offending Neologisms Engineered Yesterday has set down regulations designed to make sure that any words used to describe software or hardware do not unintentionally offend anyone.

Following are some of the changes:

- 1) Hard disk drives will now be referred to as tumescent disk drives.
- 2) Floppy disk drives shall be now called relaxed disk drives.
- 3) Software bugs are now new features.
- 4) Fatal software bugs are now special features.
- 5) System crashes will be rephrased as upgrade opportunity.
- 6) The turbo/slow button on a system will now be called turbo/megahertz-challanged button.
- 7) A drive's FAT, formally File Allocation Table, will now be called HEFTY, How Each File Takes Yards.
- 8) For the computer manufacturer, the on/off switches must now be both child proof and accessible to arthritic users.

- 9) The BIOS, Basic Input/Output System will be replaced with the less graphic BMCES, Basic Mutually Consenting Exchange System.
- 10) For software developers, screen color schemes are required to include black, brown, red, yellow, and white in an accurate reflection of the racial makeup as recorded in the 1990 U.S. Census.

Please input your comments on the new standard being implemented.

Thank you.

SYMANTEC OFFERS FREE NORTON UTILITIES AND NORTON ANTIVIRUS SOFTWARE TO BBS OPERATORS WHO POST A CODE OF ETHICS

FOR IMMEDIATE RELEASE

CUPERTINO, Calif. -- June 15, 1994 -- Symantec Corporation (NASDAQ:SYMC) today announced that as part of its support for the upcoming National Computer Ethics and Responsibilities Campaign (NCERC), it will give free copies of The Norton Utilities 8.0 and The Norton AntiVirus 3.0 to bulletin board system (BBS) operators who post one of the many code of ethics on their system.

The National Computer Ethics and Responsibilities Campaign is a formal, structured effort designed to promote ethical computing and information practices. It is sponsored by the Computer Ethics Institute, Washington DC, as well as some of America's leading computer software, technology, chemical, and financial companies, and associations, including Symantec Corporation.

The NCERC will formally be launched on June 21, 1994 with a morning press conference and Congressional briefing in the Rayburn House Office Building, Washington DC. The Capitol Hill events will be sponsored by the Honorable Edward J. Markey, Chairman of the House Subcommittee on Telecommunications and Finance. the Honorable George E. Brown Jr., Chairman, Committee on Space, Science and Technology and the Honorable Charlie Rose, Chariman of House Administration.

"We wanted to do something which would support the main objectives of the NCERC -- to increase awareness of computer and information ethics issues, and to get every day end users focusing on computer ethics and responsibilities. What better way than to provide an incentive for computer bulletin boards to

participate. BBS' are a major force in the computer communications infrastructure. Millions of threads of electronic discussion occur on them every day," said Dr. Peter Tippett, Co-Chairman of NCERC and Director of Security and Enterprise Products at Symantec.

Symantec's plan allows any bulletin board system operator (SYSOP) to choose from any currently available codes of ethics including "The Ten Commandments of Computer Ethics" or "The Basic Tenets of Computer Ethics" both developed by the Computer Ethics Institute (CEI); "The Five Considerations for Computer Conduct", developed by SRI; "Six Unacceptable Internet Activities", by the Internet Activities Board; or EDUCOM's "Basic Statement of Computing Ethics." All of these codes of ethics can be found in a file called ETHICODE.TXT in the NCERC CompuServe Forum (GO CIS:CETHICS) or on the Software Creations Bulletin Board (508-368-7139).

To claim their free software, the BBS SYSOP must place the chosen ethics statement in such a manner that all normal BBS users will see it in the normal course of their use on the BBS. The SYSOP must agree that this or another of the approved codes will remain as part of the sign-on process for at least four months. The first 500 requests received by September 30, 1994 for either The Norton Utilities or The Norton AntiVirus, which include evidence or a statement of compliance with these conditions, will be sent a complete package of the software.

Requests may be mailed to:

BBS Ethics Software Request
c/o Peter Tippett
Symantec Corporation
2500 Broadway
Santa Monica, CA 90404-3063

E-Mail requests:

(Subject field should be: BBS Ethics Software Request)
Internet: ptippett@symantec.com
CompuServe: 72350,750
MCI: ptippett or 429-5370

"We have long provided tools which help computer users prevent or recover from security problems, data corruption or loss, computer viruses and other mishaps involving PCs, Macintoshes and networks," said Ellen Taylor, Symantec vice president and general manager of The Peter Norton Group. "It only makes sense for us to help the computing community avoid many of these problems in the first place. To the extent that we get more responsible use of computers, the industry will grow faster, establishment of burdensome legislation and restrictions will be less likely, and we will all benefit."

Symantec Corporation develops, markets and supports a complete line of application and system software products designed to enhance individual and workgroup productivity as well as manage networked computing environments. Platforms supported include IBM personal computers and compatibles, Apple Macintosh computers as well as all major network operating systems. Founded in 1982, the company has offices in the United States, Canada, Australia and Europe. Information on the company and its products can be

obtained by calling (800) 441-7234 toll free, or (503) 334-6054.

Computer Ethics for Users

Dr. Peter S. Tippett
Director, Security & Enterprise Products,
Symantec, Peter Norton Group
ptippett@symantec.com

Director, Computer Ethics Institute
National Computer Ethics & Responsibilities Campaign Co-chairman

The following are several codes of ethics collected from other sources. Please feel free to use them with appropriate reference to their sources.

The Computer Ethics and Responsibilities Campaign itself does not subscribe to or support any particular set of guidelines or any particular viewpoint on computer ethics. Rather, the Campaign's mission is to foster thought and discussion about ethical and moral issues as they apply to the uses and abuses of computer and information technologies.

Several different, but complimentary approaches to thinking about computer ethics for computer users are summarized below. These should provide a basis for discussions and education on computer ethics for computer users.

NOTE: BBS - Symantec offer participants: For the purposes of participation in Symantec's offer to BBS operators, only the numbered paragraphs need to appear in your BBS screen. Other paragraphs which are not numbered are considered discussion and may be used or not. All numbered paragraphs (and those preceded by the number symbol, #) associated with the chosen code of ethics must be included on any given system. The numbers themselves are not required in your implementation of any of these codes.

The Six Basic Tenets of Computer Ethics:
(Computer Ethics Institute, Working Committee)

1. Golden Rule: Always use information systems in such a manner that the rights and legitimate interests of others are respected.

TWO COMMON FALLACIES:

The lack of computer and information technology-specific rearing, along with some of the inherent properties of computers and networks (particularly the binary nature of computers and an isolation-voyeur nature of network computing) has led to two pervasive fallacies among many in the computer generation.

2. The Nintendo Fallacy I understand that just because something is legal, it isn't necessarily moral or right. Just because something is easy, doesn't make it right.

Many in the computer culture believe that computers will not let them cheat or, by extension, do wrong. Both computer games, and the binary nature of computers themselves seem to foster this belief. Many users believe that if something would be wrong or unethical, then there should either be a law against it, or the computer or system should prevent them from doing it. For example, many users believe that if a computer security system has a weakness, they should be exploited, or that, because writing a computer virus is not explicitly illegal, and because the first amendment protects freedom of speech, then writing and trading in computer viruses is good, or at least, OK.

Plucking the feathers off of a live bird is legal in most places, but it clearly isn't right. Similarly, Copying someone else's term paper and representing it as your own, or pirating software are both quite easy, but not right.

3. The Samsonite Fallacy I understand that people are always the ones ultimately harmed when computers are used unethically. The fact that computers, software, or a communications medium exists between me and those harmed, does not in any way change my moral responsibility toward my fellow humans.

Like the unbreakable luggage, novice computer users are constantly told, they can't break or harm anything by playing with the computer. However, the root of this fallacy may exist more because of the mask that computers can provide their users. Users can easily use their computer to camouflage their identity (like a one way mirror), or to monitor, read, or alter other people's information without their knowledge or consent. Whatever the root cause, it is common for users to ignore the fact that causing harm or disruption to a computer system or its information, actually results in real harm to other people, not just to the computer or data.

PLEDGES:

In an effort to define concepts of responsible computing that could be both understood and implemented by a 10th grader, The Working Group on Computer Ethics and the Computer Ethics and Responsibilities Campaign defined the two fallacies above and just three "basics" which are thought to cover perhaps 80% of the ethical issues end users are likely to encounter. In the interest of simplicity, ease of understanding and ease of use, there was no attempt to try to describe or address the many other issues of end user computer ethics:

4. Respect Authors -- Piracy and Plagiarism I will respect the rights of authors including authors and publishers of software, as well as authors and owners of information. I understand that just because copying programs and data is easy, it is not necessarily right.

5. Respect Privacy -- Breaking and Entering I will not break into or use other people's computers or read or use their information without their consent.

6. Respect Property & Order -- Malicious Software I will not write or knowingly acquire, distribute or allow intentional distribution of harmful software like bombs, worms and computer viruses.

FOUR PRIMARY VALUES:

The National Conference on Computing and Values proposed four primary values for computing. These were originally intended to serve as the

ethical foundation and guidance for computer security. But they seem to provide value guidance for all of us who create, sell, support, use, or depend upon computers. That is, they suggest to us the values which will tend to improve and stabilize the computer and information world, and to make these technologies and systems work more productively and appropriately for us.

We should strive to:

1. Preserve the public trust and confidence in computers.
2. Enforce fair information practices.
3. Protect the legitimate interests of the constituents of the system.
4. Resist fraud, waste and abuse.

CONSIDERATIONS FOR CONDUCT

Don Parker at SRI defined five "tests" or considerations to use when trying to decide whether something would be ethical or not. They are designed to be used by anyone to help them understand the ethical implications of something they are about to do.

1. Informed Consent - Try to make sure that those people affected are aware of your planned actions and that they don't disagree with your intentions even if you have rights to do these things.

2. Higher Ethic In The Worst Case - Think carefully about your possible alternative actions and select the most beneficial necessary one that would cause the least or no harm under the worst circumstances.

3. Change Of Scale - Consider that an action you take on a small scale or by you alone might result in significant harm if carried out on a larger scale or by many others.

4. Owners' Conservation Of Ownership - As a person who owns or is responsible for information, always make sure that the information is reasonably protected and that ownership of it and rights to it are clear to all users.

5. Users' Conservation Of Ownership - As a person who uses information, always assume it is owned by others and their interests must be protected unless you explicitly know it is public or you are free to use it in the way you wish.

UNACCEPTABLE INTERNET ACTIVITIES:

In January 1989 Internet Activities Board published for general distribution a document called Ethics and the Internet (RFC 1087). It proposes that access to and use of the Internet is a privilege and should be treated as such by all users of this system. The IAB "strongly endorses the view of the Division Advisory Panel of the National Science Foundation Division of Network, Communications Research and Infrastructure" which, is paraphrased here,

#. Any activity is characterized as unethical and unacceptable which purposely:

1. seeks to gain unauthorized access to the resources of the Internet,
2. disrupts the intended use of the Internet,
3. wastes resources (people, capacity, computer) through such actions,
4. destroys the integrity of computer-based information,

5. compromises the privacy of users.
6. involves negligence in the conduct of Internet-wide experiments.

TEN COMMANDMENTS OF COMPUTER ETHICS:

In 1991, The Computer Ethics Institute held its first annual Conference on Computer Ethics in Washington DC. The conference theme was "In Pursuit of a Ten Commandments of Computer Ethics." These commandments were produced there and have been the most visible guide lines for computer ethics since.

The Ten Commandments of Computer Ethics:

1. Thou shalt not use a computer to harm other people.
2. Thou shalt not interfere with other people's computer work.
3. Thou shalt not snoop around in other people's files.
4. Thou shalt not use a computer to steal.
5. Thou shalt not use a computer to bear false witness.
6. Thou shalt not use or copy software for which you have not paid.
7. Thou shalt not use other people's computer resources without authorization.
8. Thou shalt not appropriate other people's intellectual output.
9. Thou shalt think about the social consequences of the program you write.
10. Thou shalt use a computer in ways that show consideration and respect.

People who are interested in participating or helping to arrange for sponsorship of The National Computer Ethics & Responsibilities campaign should contact either of the campaign co-sponsors:

Dr. Peter S. Tippett, Campaign Co-chairman
(Director, Computer Ethics Institute)
310-459-9565 campaign office & voice mail
310-459-8513 Fax
ptippett@symantec.com
Compuserve 72350,750
MCI Mail: ptippett or 429-5370
Director, Security & Enterprise Products
Symantec, Peter Norton Group
2500 Broadway, Suite 200
Santa Monica, CA 90404

Nick Routledge, Campaign Co-chairman
National Computer Ethics & Responsibilities Campaign
18054 Bluesail Dr.
Los Angeles, CA 90272-2901
Vox: 310-450-7941 x 15
FAX: 310-450-1069
E-mail: 6300836@mcimail.com

IMPORTANT NOTICE!

=====

STReport International Online Magazine is available every week for your reading pleasure on DELPHI. STReport's readers are invited to join DELPHI and become a part of an extremely friendly community of enthusiastic

computer users there.

SIGNING UP WITH DELPHI

Using a personal computer and modem, members worldwide access
DELPHI services via a local phone call

JOIN --DELPHI

Via modem, dial up DELPHI at 1-800-695-4002
then...

When connected, press RETURN once or twice
and...

At Password: type STREPORT and press RETURN.

DELPHI's 20/20 Advantage Plan
20 Hours for Only \$20!

Advantage Members have always enjoyed the lowest DELPHI access rates available. On the new 20/20 Advantage Plan, members receive their first 20 hours of access each month for only \$20. If you happen to meet someone online or find some other diversion, don't worry because additional usage is only \$1.80 per hour.

20/20 Advantage rates apply for access via SprintNet or Tymnet from within the continental United States during home time or via direct dial around the clock. Home Time is from 6pm to 6am weekdays. Access during business time carries a surcharge of \$9 per hour. These rates apply for most services, but note that there are some surcharged areas on DELPHI which are clearly marked with a "\$" sign.

Who is eligible to take advantage of the plan? Any DELPHI member in good standing. Applications are reviewed and subject to approval by Delphi Internet Services Corporation.

It's easy to join. If you meet the eligibility requirements, you can apply online -- at any time -- for membership in the DELPHI 20/20 Advantage Plan. Your membership becomes active at 4 a.m. Eastern Time on the first billing day of the following month.

The \$20 charge will be billed to you at the beginning of the month to which it applies. Any portion of the 20 hours not used in any month does not carry forward into the next month.

Advantage rates may be changed with 30 days notice given online.

TRY DELPHI FOR \$1 AN HOUR!

For a limited time, you can become a trial member of DELPHI, and receive 5 hours of evening and weekend access during this month for only \$5. If you're not satisfied, simply cancel your account before the end of the calendar month with no further obligation. If you keep your account active, you will automatically be enrolled in DELPHI's 10/4 Basic Plan, where you can use up to 4 weekend and evening hours a month for a minimum \$10 monthly charge, with additional hours available at \$3.96. But hurry, this special trial offer will expire soon! To take advantage of this limited offer, use your modem to dial 1-800-365-4636. Press <RET> once or

twice. When you get the Password: prompt, type IP26 and press <RET> again. Then, just answer the questions and within a day or two, you'll officially be a member of DELPHI!

DELPHI-It's the BEST Value and getting BETTER all the time!

ATARI/JAG SECTION (III)

=====

Dana Jacobson, Editor

> From the Atari Editor's Desk

"Saying it like it is!"

Y'know, it's been one helluva week! Between listening to speakers at work give a day and a half seminar on "CQI" for managers and reading mail from a few cranky Atari users and developers, I feel the urge to reflect in kind. However, I will restrain myself and keep focused!

A number of issues have come out since last week's issue. I swear that there's a continual full moon over southeastern Canada and every few months or so it has an unusually strong effect. The reactions from that part of the globe to one of the STReport Confidential reports were over-reactions and downright tasteless. The reactions were to write a few messages online, making a number of insults along the way instead of taking the time to compose a tactful statement and sending it along as a letter to the editor, or something similar. After all, if you want to attempt to clarify something so the readers get another viewpoint, where better than to capture the same audiences? Instead, we get the same smokescreens and insults.

Those messages did manage to accomplish one thing, however. I responded to a few of them because they didn't deserve to go unanswered. Surprisingly, one online service was the scene of deletion of messages from both parties resulting in reactions from the userbase, both upset and elated. Fortunately, the end result was that there was the recognition that there was an emotional over-reaction. Hopefully, this type of knee-jerk reaction will not re-occur.

But, these reactions and subsequent comments resulted in a number of questions from readers and myself. One question that came up a few times from various people was what role does Ralph Mariano have in the Atari section of STReport? The answer, simply put, is very little. I'm surprised that people even asked! One user even seriously asked me why I didn't take on a more active role in the Atari section of the magazine instead of Ralph trying to balance between multiple sections! Except for an occasional Atari-related item in "STReport Confidential," the Atari section of STReport is put together by me. It's been this way since last fall! Every editorial, article, news item, column (excluding 'People Are Talking'), press release, review, etc. are all packaged weekly and sent "press-ready" by me. STReport is put together by having a "shell" all formatted and the articles and/or section pieces are plugged in as they arrive. It actually works quite nicely. I even use the same style with a pre-set Atari section "template" which makes life very easy.

So, the bottom line is that the Atari section is not done, or influenced, by Ralph, as some would like to think. I'll take the credit for the good and bad things that appear in the Atari section.

The other "question" that came up was one that I've asked myself a few times over the past couple of months. And that was, am I simply "spinning the wheels" trying to maintain an Atari computer online magazine (or more specifically, an Atari section within STReport's 'new' multi-platform format)? I added the Jaguar section because it helped to supplement the computer side since Atari's focus was in that direction. Computer news for Atari users is simply not what it used to be. Yes, it's still there, but usually sporadic at best. Without the resources that we'd like to have (a widespread staff and sources), it's more of a "catch-as-catch-can" endeavor. The Atari section is not what I'd like it to be in terms of quantity and quality. My feeling is to continue to provide our readers with whatever news and information possible, but I still question the "spinning wheels" syndrome. I realize that STReport is not the only Atari support group to feel "constrained" by this. AEO is usually predominantly Jaguar-focused lately. Current Notes has cut back its number of issues, for a number of reasons. Z*Net's "comeback" was short-lived. I'm sure that the list is longer.

For the present, nothing is going to change here at STReport as far as the Atari section is concerned. However, I will be taking a hard look from time to time to see if we, or specifically, if I should try to keep at it. Some people have related to me that some news and information is better than none; others have told me why bother. At the moment, I "bother" because the Atari community still exists and I feel it's important to support it.

Let's get off of the dreary stuff now! The summer CES is less than a week away!! This show always generates a lot of interest regardless of your interests. We're certainly looking forward to it here at STReport, especially since we'll have two Jaguar staffers in attendance. We're lining up some great reports and information for you, so be on the lookout for it. We've got articles planned, interviews, and even a video of the event's highlights! It should be an exciting couple of weeks coming up here. I can't wait and I wish that I could be in attendance personally!! Oh well...

I've had my say, probably longer than I should. I'd be interested in hearing some of your reactions to the current Atari scene and also STReport's role in it all. Please feel free to make your opinions heard, whatever they may be!

Until next time...

Delphi's Atari Advantage!!
TOP TEN DOWNLOADS (6/16/94)

(1) AEO JAGUAR EDITION #2	*(6) DATELINE ATARI JUNE 94
*(2) SPEED OF LIGHT VIEWER V3.1	(7) ASCGIF-ASCII GIF VIEWER
(3) OCR V1.25	(8) GEMRAM V.1.6
(4) TETRIS/BITRIS/COLUMNS	*(9) FIGHT OFF THE MUTANT TOMATOES
(5) NEOCOM - TERMINAL PROGRAM	*(10) WYRD WAYS

* = New on list
HONORARY TOP 10

The following on-line magazines are always top downloads, frequently out-performing every other file in the databases.

STREPORT (Current issue: STREPORT #10.24)
ATARI EXPLORER ONLINE (Current issue: AEO - VOLUME 3, ISSUE 9)
Look for the above files in the RECENT ARRIVALS database.

> Internet's "Atari Announce"! STR NewsFile! - New Internet Source Takes
"*****"
Off!

The latest Internet newsgroup, "comp.sys.atari.announce" is only a couple of weeks old, but announcements are starting to filter in with some interesting news and information. Here are a few of the latest announcements:

> Falcon Sample Editor! STR InfoFile!
"*****"

Subject: [SOUND] FALCON SAMPLE EDITOR! Date: Mon, 13 Jun 94 10:58:49 GMT
Organization: Computer Unit, University of Exeter, UK Lines: 71 Approved:
ysiu@lexicor.com Message-ID: <2tifhi\$fjr@news.bu.edu> NNTP-Posting-Host:
csa.bu.edu Originator: lexicor@csa

** * S U P E R S A M * * * * *

The Superb Sample Editor v1.01

A Terrosaur Systems Production for the Falcon030
Copyright (C) 1994 by Daniel Hastings

SuperSam is Shareware! To enable the program's full functionality you must send the registration fee to the author.

What is SuperSam?

SuperSam is a sound sample editor for the Falcon030. A sound sample is a digitally stored sound. Hence with SuperSam you can digitally store sounds on disk, and edit them in a variety of ways including reversing them to play them backwards, cutting and pasting, combining multiple sounds and many more functions. SuperSam eventually aims to be able to do anything you could possibly wish to do to a sound sample.

Features

SuperSam has many features including:

- * Handles 6 sample file formats
- * Handles 8 bit mono, 8 bit stereo and 16 bit stereo samples

- * Clipboard cut, copy, load, paste, replace, overlay
- * Ability to import/export from the GEM clipboard
- * Ability to sign and unsign samples
- * Ability to fade in/ fade out samples
- * Ability to boost volume by 25% or to the max possible
- * Ability to reduce volume by 25% or to zero
- * Ability to zoom in for finer editing
- * Flexible deleting
- * Ability to swap the channels on a stereo sample
- * Ability to pan the stereo image left to right or vice versa
- * Ability to edit only the left or right stereo channel
- * Ability to shift sample playback frequency
- * Ability to create samples from the MIC input
- * Supports all Falcon playback frequencies
- * Customisable
- * Can be installed as an application to play samples when they are double clicked
- * Will play or load a sample dropped on its desktop icon
- * Online HELP system
- * Batch conversion between file formats
- * Jukebox mode to play all samples in a folder
- * Fully GEM legal programming
- * MultiTOS compatible
- * Dynamic Memory Allocation

SuperSam is now being uploaded to many FTP sites and distributed through NeST and CIX. It will also be shortly submitted to comp.binaries.atari.st.

Newsgroups: comp.sys.atari.announce Subject: [GAME] ISOLA a strategy game
 Date: 13 Jun 1994 12:47:17 +0200 Organization: U.F.R. I.M.A., University of Grenoble, France Lines: 27 Approved: Lexicor@world.std.com Message-ID: <2thgp4\$5kc@news.bu.edu> Originator: lexicor@csa

> ISOLA! STR InfoFile!

Hello,

I've uploaded the third version of ISOLA on:

```
atari.archive.umich.edu
ftp.tu-clausthal.de
ftp.cnam.fr
```

The goal of the game is to isolate the opponents by moving and placing blocks on a 8x6 grid. You can play against computer (four levels). There is also a online help and availability to save games.

This have been programmed under GEM, and should works on all resolutions.

Enjoy it,

Thierry

Thierry Grellier
Thierry.Grellier@ufrima.imag.fr
DESS Genie Informatique

> STELLO! STR InfoFile!

From news.bu.edu!csa!lexicor Tue Jun 14 20:15:10 1994 Path:
news.bu.edu!csa!lexicor Newsgroups: comp.sys.atari.announce Subject:
[GAME] STELLO a new Othello game. Date: 10 Jun 1994 18:52:23 GMT
Organization: Dept. of Math. & Computer Science, Odense University,
Denmark Lines: 33 Sender: news@wagner.imada.ou.dk (USENET News System)
Approved: ysiu@lexicor.com
Message-ID: <2tacp7\$dr4@news.bu.edu> Keywords: Othello, strategic game,
multitasking, gem Originator: lexicor@csa

Hello everybody.

After five years of development, here it is. The ultimate
Othello/Reversi playing program "Stello". Outstanding features such as:

- Works under Gem, all Atari computers, all screen resolutions,
(x resolution must be at least 640)
- Supports Multitos and WINX
- Uses multitasking under Multitos
- Advanced gameplaying algorithms, alfa-beta minimax, iterative
deepening, response killer table, saves game tree and
uses the zerowidth minimax modifikation.
- One of the best Othello programs in the world.
- Background pictures on the board
- Supports english, german and danish (Hey i live in Denmark).

I could go on forever, but why don't you try to download it and see for
yourself. More details in the documentation. By the way it is a
Shareware game. I have uploaded the game to the following ftp sites, in
the file STELLO.LZH.

atari.archive.umich.edu
ftp.uni-kl.de
ftp.uni-paderborn.de
ftp.cnam.fr

Happy Othello playing.
Claus J. Pedersen.

> Lexicor Software Supports Local User Group! STR NewsFile!

(Editor's Note)

One of the things that I've found to be unique about the Atari community is the support that many Atari developers perform to help out user groups. Even though this is a shameless plug for my own user group and one of our local developers, I think it's important to recognize such efforts by our developers.

Lexicor's Yat Siu currently resides in Boston, the home of one of a few remaining Atari user groups in the area. Yat has spoken to a few of the groups, including ours - the South Shore Atari Group (SSAG). Yat has also attended a number of our meetings and helped with others' presentations. He's carted in the Medusa and other hardware components to help out the group. Annually, SSAG sponsors what has routinely become one of our most successful and enjoyable events, our hardware and software auction. This has not only been a great source for inexpensive deals for the members, but a great fund-raising event for the group. Yat has recently donated what amounts to approximately \$1,200 worth of software and hardware to the group as auction items as well as raffle prizes! I feel that this type of support, greater than the typical level of support that we've come to appreciate from various developers, needs to be mentioned publicly. STReport is as good a public source as any to do so. Here's the announcement that has been posted on various online sources to announce the event:

The South Shore Atari Group & Lexicor Software Announce the
5th Annual SSAG Auction!!

This Coming Friday, June 17th at 7:00pm at the U/Mass Boston Harbor Campus, McCormack Hall Room 1-207. Look for signs pointing the way. Arrive early, Bid High,, Bid Often!!!

Lexicor Software will be sponsoring the SSAG with close to 1000 U\$D worth of Hard and Software.

The Grand Prize, which is meant to be for the actual Pick-out-of the hat, is a 4 Megabyte Simm Module for Falcon Owners (very useful if you only have a 1 Meg Falcon worth nearly 200 U\$D) and a complete beginner rendering package consisting of Cybersculpt 1.1. (Retail value 69.95 U\$D) and Phoenix Version 1.0 actual value 89.95 U\$D with the Utilities Disk value 49 U\$D

The Grand Prize is worth 408.9 U\$D (RRP all)

Other than that, Lexicor will be auctioning for the SSAG the following:

3 non-manual versions of Prism Paint 2. Retail \$99.00 if bought off the shelf with manual.

3 non-manual versions of Raystart 1.1. Retail \$189.00 if you bought this off the shelf with the manual.

If you bid and successfully get any of these six fine programs you can get the manual by sending in the registration card with the request to purchase the Manual at just the cost of the Manual.

We wish to thank Lexicor and Yat Siu for their generous gift to the South Shore Atari Group!!

NoRm!

> From Compuserve's News Service! - Interesting tidbits!

PAPER SAYS ZIFF EMPIRE IS FOR SALE

The computer industry is abuzz today over a report that Ziff Communications, a leading publisher of computer magazines, is being put up for sale by the Ziff family.

The Wall Street Journal reported this morning the family is asking between \$2 billion and \$3 billion for the publishing empire, which has about \$1 billion in annual revenues.

The Reuter News Service says Ziff has retained Lazard Freres to find a buyer to conduct an auction, adding industry observers have told the paper the Ziff family anticipates bids from telecommunications companies, online businesses and large magazine publishers.

Besides publishing PC Magazine, PC Week and PC Computing magazines, Ziff has an active database business, an online service and a computer trade show operator. On CompuServe, it produces the large ZiffNet service (GO ZIFFNET).

Analyst William Bluestein of Forrester Research Inc. told the Journal the Ziff family is cashing out because it believes the market is at a peak.

Reports from Reuter News Service are a regular feature of CompuServe's Executive News Service (GO ENS).

K-III MAY MAKE BID FOR ZIFF EMPIRE

K-III Communications Corp., which publishes 50 consumer and trade magazines and most recently bought the assets of Dun & Bradstreet Corp.'s machinery information division, says it is in the hunt to acquire the Ziff Communications empire. Other potential buyers remain non-committal.

As reported yesterday (GO OLT-224), the Ziff family is putting up for auction its massive holdings in computer magazines, databases, online services and computer trade show operations.

"We've been actively looking at and acquiring businesses, and this is the type of business we would look at closely," K-III President Charles McCurdy told Jeffrey Benkoe of the Reuter News Service. Asked if K-III is interested specifically in purchasing Ziff's computer magazines, McCurdy added, "We would be interested in them, yes." He declined, though, to say whether K-III has been in negotiations with Ziff officials.

An unidentified publishing industry source told Reuters the Ziff announcement came earlier than expected, adding, "They were not really ready to circulate the information," though word had spread throughout the industry that Ziff was about to shop around.

Meanwhile, Ziff said in a statement late yesterday that chairman Eric Hippeau and other senior executives "plan to remain with the company after the sale." It did not elaborate.

Other communications giants declined comment on whether they will bid for the Ziff properties. However, business writer Skip Wollenberg of The Associated Press reports that among names mentioned as other possible bidders are the Newhouse family's Advance Publications Co., Hearst Corp., Britain's Reed Elsevier and Germany's Bertelsmann AG.

Benkoe collected "no comments" from officials at Capital Cities/ABC Inc., News Corp. (which owns TV Guide among other magazines), Hachette Filipacchi Magazines and Conde Nast Publications Inc.

Reuters quoted Standard & Poor's analyst Heather Goodchild as saying she doesn't expect News Corp. or Time Warner Inc. to buy any Ziff pieces, saying such purchases might put pressure on their debt ratings.

One of the Ziff family members -- grandson Robert Ziff -- told AP the Ziffs have ruled out any sale to computer publishers International Data Group or CMP, saying the family doesn't want to share confidential financial information with smaller rivals who probably couldn't raise sufficient financing for a competitive bid.

How extensive is the Ziff empire?

AP says New York-based Ziff Communications employs more than 4,300 people across its four divisions and has annual revenues of about \$1 billion. Ziff-Davis Publishing is the company cornerstone, producing computer magazines, newspapers, newsletters, books and other media.

The wire service lists these specific holdings:

-:- The Ziff-Davis Publishing Co. publishes eight magazines in the U.S. led by the industry's largest single computer title, PC Magazine. The other U.S. magazines are PC Week, PC-Computing, Computer Shopper, MacUser, MacWeek, Windows Sources and Computer Gaming World.

Its Cobb Group publishes newsletters about software and its Ziff-Davis Press publishes computer books like the "How It Works" series. It also publishes the semi-annual newspaper supplement Personal Computing. Plans have been announced to launch Computer Life magazine for computer users and Family PC magazine for parents and kids. It also plans to publish InterActive Week, The Newspaper for the Information Highway.

The company also publishes seven magazines in Germany, the United Kingdom and France and has 35 licensed editions in 28 countries.

-:- The Ziff-Davis Exposition and Conference Co. sponsors the Networld-Interop trade shows and conferences that cover computer networking. Its Seybold conferences are leading shows in graphic communications, graphic arts and printing. It also recently held Digital World, a trade show on the convergence of the computer, entertainment and telecommunications industries.

-:- The Information Access Co. provides information and research databases. They are available in more than 20,000 libraries and serve 15 million people annually.

-:- Interchange Network Co. provides online information. Its ZiffNet

online service provides software and information on buying computers and reports more than 200,000 subscribers on Compuserve, Prodigy and Apple's World.

Reports from Reuter News Service and from The Associated Press are accessible through the Executive News Service (GO ENS).

COMDEX SAYS "NO" TO SEXY SOFTWARE

Sexually explicit software and other suggestive materials will no longer be welcome at the Comdex computer trade shows.

Following more than a year of complaints by some exhibitors and attenders, Comdex sponsor Interface Group says it has decided to prohibit displays of sexually-oriented products.

Vice President Milt Herbert told The Associated Press, "This particular type of material does not fit with the kind of computer trade show they want to attend."

AP says about 20 makers of sexually explicit software were among the 1,100 companies that participated in Spring Comdex last month in Atlanta, which was attended by about 80,000 people. The wire service observed the development of CD-ROM has created "a niche industry" for sexually-oriented software.

Says the wire service, "The makers of such software have drawn a lot of media attention during the last few Comdex conventions. ... Other trade shows, including the Consumer Electronics Show, typically place exhibitors of sexually explicit products in a separate room or building away from the main trade hall."

Herbert said the Interface Group will continue to welcome all software companies, but said it will more stringently enforce an existing contract provision allowing it to exclude any material it deems offensive.

He acknowledged the ruling may cause some software companies to choose not to attend, but "we are willing to pay that price in order to keep our general business objectives in line."

Reports from The Associated Press are accessible through the Executive News Service (GO ENS) and in AP Online (GO APONLINE).

POULSEN ADMITS COMPUTER CRACKING

Former fugitive computerist Kevin Poulsen faces up to 40 years in prison and a \$1.7 million fine after pleading guilty to charges he broke into systems to rig radio promotional contests, eavesdrop on private citizens and thwart police investigations.

The 28-year-old Poulsen, scheduled for sentencing Oct. 17, pleaded guilty in federal court to computer fraud, interception of wire communications, mail fraud, money laundering and obstruction of justice.

Asked as he was led in shackles from the courtroom why he entered the plea, Poulsen said simply, "Because I am guilty."

Assistant U.S. Attorney David Schindler told Elka Worner of United

Press International that Poulsen rigged promotional radio give-away contests and fraudulently won two Porsches from radio station KIIS-FM, \$20,000 in cash from KPWR-FM and at least two trips to Hawaii and \$2,000 in cash from the same station.

In court, Poulsen also admitted:

-:- Using aliases and phony identification between 1989 and 1991 in order to retrieve and sell one of the Porsches and to launder the proceedings of the sale.

-:- Accessing computers to identify undercover businesses used by the FBI, to locate FBI wiretaps and to eavesdrop on private citizens.

Poulsen, known to some in the computing underground as "Dark Dante," told the judge he obstructed justice by making a phone call minutes after his arrest to alert his accomplice to hide the computers used in his illicit activities.

Before his arrest in April 1991, Poulsen, whose exploits once were featured on TV's "Unsolved Mysteries" broadcast, eluded authorities for nearly a year and a half, on charges in an indictment returned by a San Francisco grand jury.

Poulsen's courtroom appearances are not finished. He is slated to stand trial in July in San Francisco on 18 counts of telecommunications and computer fraud, including charges he stole Pacific Bell access codes to invade an Army network and to obtain information used in FBI investigation of former Philippine President Ferdinand Marcos.

He also is accused of obtaining unpublished phone numbers for the Soviet consul in San Francisco. Poulsen faces 37 years in prison for those charges, The trial is pending.

Reports from United Press International are accessible in CompuServe NewsGrid database (GO NEWSGRID) and through the Executive News Service (GO ENS).

> ONLINE WEEKLY STReport OnLine

The wires are a hummin'!

PEOPLE... ARE TALKING
=====

On CompuServe

compiled by
Joe Mirando

Hidi ho friends and neighbors. Well, summer has come early to my neck of the woods. We're in the middle of a bonafide heat wave. The temperature and humidity are suddenly oppressive and I'm grateful for the chance to sit inside and work on this column.

One of the things that's always bothered me about the change of seasons is the way it affects people while they're driving. People become... hmmmm what would be the appropriate politically correct term... ah yes, intellectually challenged... yeah, that's it. People on the road tend to become intellectually challenged when there's a sudden change in the weather. I'm glad that it usually doesn't happen on this electronic highway.

So c'mon with me and cruise down the highway. We can play the digital equivalent of that license plate game. Its easy. You just pick out the interesting stuff. Let's give it a try...

From the Atari Computing Forum
=====

Michael Koepps asks about an ST emulator for his DOS machine:

"Some years ago I had an Atari ST 1040 and used an Dos Emulator called PC Ditto, which worked fine.

As I swapped to a Dos based system I am now looking for a Program(software, PD) that emulates an Atari on a Dos based system. I would be pleased if anyone could help me."

Sysop Jim Ness tells Michael:

"What you want is the GEMULATOR package, which is a PC card holding the TOS operating system roms, plus software emulation. A 486/25 runs at roughly the same speed as a 1040, during emulation."

The big kahuna, Chief Sysop Ron Luks, tells Bill Aycock:

"I dont know if I've mentioned it recently, but I wanted to again say thanks for your ADB (Aycock data base program). I use the Vendors information constantly, and as a desk acc its readily available while I'm still logged on using FLASH or FLASH II."

Bill tells Ron:

"My pleasure! It's always nice to hear that someone else finds a program I basically wrote for myself to be useful. :-) I keep a couple copies set up as non-resident MDX's so I can get at several address books easily. Works better than my memory, in most cases."

John Damiano of Transierra tells Bill:

"I don't think you have written anything that wasn't excellent and useful..you..Jim Ness and The Codeheads have been great over the years. Thanks for all your efforts."

Bill tells John:

"Thanks! Although some of the little odds and ends may have been only

marginally excellent and partially useful..."

Fred Clark asks about downloading files:

"I have tried to download ZIP25.tos 3 times without any luck. The program quits sending after 700 KB. Could you please let me know if it's the file or just my comms software."

Carl Barron tells Fred:

"Look for stzip 2.6... version 2.5 is VERY BUGGY!!"

Bill Aycock tells Fred:

"the ZIP25 file is nowhere near 700k in size... what comm software are you using? Do you have an error-correcting modem?"

We'll keep you informed of Fred's progress.

Sean Collins posts:

"I've been watching the recent discussions about Atari. As for myself, I like the Atari computers, even if the company itself has rarely if ever offered reliable support. But there are three things I would like to be able to improve; somebody here probably knows how. (I'm really way behind when it comes to Atari hardware and software. I've been using Atari for seven years, but haven't kept up with developments.)

First, I envy those PC people (like myself when I'm at work) who get great screen resolution and color all at once (not to mention a bigger screen to begin with). Is there a way to get that with an ST ... that doesn't cost a lot of money? And is there a way to get good multiple fonts onscreen with the ST?

Second, I'm wondering if there's some good multitasking software available somewhere, so that one can run several programs at once.

Third, I've been using Hisoft Basic for years, and I like it. But I'd like to "upgrade" (if there's such a thing as upgrading to something that is already several years old) to Hisoft's Power Basic, or something better still. Any suggestions about where I could get it? (Michtron, the company that produced Hisoft Basic, has I gather has gotten out of Atari -- or has it?)

It probably sounds to some like I just walked in out of the middle ages. Well, I did, sort of."

Yat Siu of Lexicor Software tells Sean:

"If you told us what Atari you were thinking of upgrading we might be able to help you in more detail. There are ways to get higher resolution using Multisync Monitors, but they generally do not equal to the term cheap :)

Most of the time, it might even be better to purchase a TT or Falcon, however if you have a 1040, and do not wish to spend more in multiple colors and high resolution graphics you might consider the overscan program which will make more screen space on a SM124...like 20-30% more I think..black and white naturally.

Sean tells Yat:

"Right now I'm using a Mega2 with an SM124. Where's the overscan program available?"

Yat offers to help out:

"Let me check it out for you, one is commercial, another is shareware which I saw on ftp.."

Peter Joseph tells Sean:

"In addition to what others will tell you about here, I can highly recommend you get a TEC (Tos Extension Card) from Codehead Technology. It will bring you up to date with the latest TOS for the ST line, currently 2.06. It is a major upgrade and makes the desktop so much easier to use that I can't believe I lived without it as long as I did. It's about \$140 for the megabus version if I remember right and it's very easy to install. It also offers a switch option that allows you to switch between TOS 2.06 and whatever you have now, for those few programs that don't like TOS 2.06. Actually, I use the switch very little; I have 2.06 and 1.04 installed and I can't stand to go back to 1.04. Spoiled I guess."

Steve "P" tells us:

"I'm trying to figure out if getting a VGA monitor for my falcon will be worth the extra \$\$. Right now, I'm running on an SC1224 for color stuff and my old SM124 for mono, namely CUBASE, which I run most often.

My question is, will getting a VGA monitor get rid of the IRRITATING flicker that comes along with the HiRes emulation mode on the Falcon, so I can use one monitor for both mono and color programs?? (A dream of mine for years (grin).....) As it is now, it's doable, but murder on the retinas!

I'm just plain sick and tired of 6 years of switching monitor cables every time I want to switch resolutions. Does anyone know if getting a VGA monitor will do away with this flicker??? (Am I being redundant? Did I ask this already?)"

Kris Gasteiger tells Steve:

"I have a Falcon, and an SVGA monitor, which I generally use in 16 color/640*480 mode, high res, reasonable screen redraws. True color mode only offers a 40 column display in VGA mode, and redraws seem slower. 256 color/640*480 mode also seems to slow down the display, but it is awesome for some stuff. I think the expense of the SVGA monitor is well worth it.

I got an EMC Low Radiation 14" SVGA monitor from the Computer Zone, in N. Attleboro, MA. The display is rock solid, the resolution is great, and the colors are rich. I wouldn't go back unless I needed 80 column True Color mode... Oh, specify .28 dot pitch, anything larger just can't cut it. (I find things look grainy on a larger dot pitch monitor...).

You get that flickery display using interlaced mode on the 1224 monitor, not worth the eye strain if you ask me...

Instead of switching cables, try getting a monitor switch box. This would be your cheapest solution. I think there was even an article on how to build one in a recent ST Format, the British Magazine."

Yat Siu of Lexicor tells Steve:

"For higher resolution work, a VGA is very much required...you can also use the BLOWUP Hardware or Software to increase your pixel-clck and get 1.a better refresh rate 2.no flicker at higher resolution and 3. upto 1024x768 or 1280x1024 in 16 colors (1024x768 in 256) physical screen resolution..."

Blowup on a VGA can also help you get nearly 72-78Hz on the regular Falcon VGA modes...then you will have no noticeable flicker...a VGA is much better..and if you use a device such as BlowUP you can get high resolutions which is useful for your work with Cubase I would imagine.."

Jody Golick asks for help with a problem:

"Since I got my Atari SLM804 laser printer I have experienced a high rate of system crashes and lockups when printing with Notator and Calamus. The crashes come during printing jobs and seem to be quite random. Reboot and try again seems to eventually get the job done though occasionally I have had to re-try several times in a row before achieving results.

Does anyone share my experience? Anyone care to offer explanations, hypotheses or solutions?"

Albert Dayes of Atari Explorer Online Magazine asks Jody some questions about the problem:

"Have you tried using a clean system? No desk accessories and the bare minimum in auto folder programs? Have you checked your DMA cable from your printer to your computer to see if it is a good connection. What Atari are you using and what version of TOS?"

Jody tells Albert:

"I drive a 4 meg STE with TOS 1.6.

The AUTO folder contains:

Warp9 Folder100 Poolfix4 LGSelect Hotwire

For ACCS I have Maxifile and Multidesk with the Warp9 control accessories loaded. I haven't actually tried disabling Warp9 yet. I just hate to live without it...

I thought maybe it was a memory problem but the files are not necessarily long or complicated. I have been printing some pretty long pieces with Notator but not dense enough to seriously tax memory as far as I can tell (less than 20 percent of Notator's free memory). The annoying thing is that the problem is so inconsistent. The printer chugs along happily and I start to think I've got it licked when whammo the system locks up. Re-boot, start at the page which killed it and voila until the next time it happens. It's possible that it is a Notator thing. Maybe I'll repost my question in a MIDI area."

Albert tells Jody:

"It is possible it is a Notator Logic related problem. Another possible reason could be loose chips. The MMU, Shifter and DMA come to mind."

Jody tells Albert:

"I am not using Notator Logic. I have "Classic" Notator 3.16 - as far as I know the end of the line for a fine program.

Loose chips? The thought of opening up the box makes me anxious and apprehensive. I don't have time to lose if I make things worse - and with King Klutz at the controls anything can happen!

Maybe for tomorrow's printing I'll knock out Warp9 and see if there are any noticeable results."

Peter Joseph tells Jody:

"Get a hold of Charles Johnson from CodeHead. He may tell you it is Warp 9 not interacting well with Notator. I use SMPTEtrack from Barefoot Software and I have to use the Warp9 .DAT file to disable W9 when SMPTE loads. It's right in the W9 docs that it doesn't work well with MIDI prgs. He says the problem lies with the MIDI programs, not Warp9. In fact, it seems I remember it specifically listing Notator as one of the offending programs, but I can't be sure."

Jody tells Peter:

"In fact, some changes were made to Warp9 to make it more compatible with Notator and, before the laser printer I used them together without apparent problems. However, there may be a conflict. I am still testing, but I will let you (and Charles) know if I get definitive results."

Gee, this must be the week for problems. Mark Kelling tells us:

"I have a perplexing problem with my MEGA 4 ST. The desktop is screwed up. When I first turn my computer on, I see the desktop appear with the windows opened as I like. After either running any program or doing a Show/Print of a text file, I come back to a desktop with only Disc icons and a Trash Icon. No opened windows! If I try then to open more than ONE window, I get the "Desktop has no more windows available" message. So far I have had no real problems with running programs or other noticeable system problems. I just fear this is a sign of an impending disaster.

The following steps are what I have tried over the past two days to fix the problem:

1. Resaved the Desktop.Inf file directly from the desktop.
2. Did a hard drive check with the ICD Check program as well as an IBM hard disk tools program. Various unclaimed file sectors were found and fixed.
3. Copied an old Desktop.INF file from a known good disk.

The problem persists. I did compare the new INF file written by my ST to the old one and the numbers listed on the #W lines are quite different from the old INF file. Any help anyone might be able to give me would be appreciated."

Albert Dayes jumps in and tells Mark:

"Check to make sure your DMA cables are not loose. Also turn off the ICD write cache and make sure the ICD write verify is on. You might also want to check your chips (DMA, MMU, SHIFTER) to make sure they are firmly in their sockets.

Delete your desktop.inf file and then check to make sure your filesystem is in "good" health. No missing chains or cross-linked sectors. Then set up the desktop the way you like and then resave the desktop."

Mark tells Albert:

"Thanks for the advice. After checking my DMA cable, I found it had a bad line in it giving intermittent signal. Strange how that would trash RAM where the desktop.inf file is loaded but not any place else (that I noticed anyway). Luckily I had a second DMA cable which I am now using. So far, the problems have all gone away. I had begun to think maybe the RAM in my old MEGA was starting to fade away and become senile. Also, I found that my F drive dir. was "Filled with garbage" to quote my Hard drive tools package. After fixing that and doing a reformat of drive C and rebuilding the desktop.inf file, I think I'll be OK for a while. Thanks again for your quick and thorough reply!"

From the Palmtop Forums

=====

Gerald Simons posts:

"My portfolio just died. When I cold boot it, all I get is the first Atari Logo copywright screen. When I try to move on to initialize the machine, nothing happens. If I turn it off and back on the screen is all garbage. Anyone have any ideas? Or has it just outlived its useful life? Does anyone know if it is possible to repair a Portfolio?"

Sysop Judy Hamner tells Gerald:

"It is usually not feasible to repair a Portfolio. Atari has a replacement program where it can be swapped for a new one.

You can try using a fresh set of batteries. Low batteries can make the machine appear dead. Try the cold boot process again too. Another frequent source of problems is the ribbon cable for the screen. It runs through the hinge and can get crimped. Sometimes a little careful wiggling can help if this is the problem."

Nick Hill posts:

"I'm thinking of buying a Palmtop. Possibly the Psion 3a or HP 100. How well does the Psion link to the desktop. Can we swap files? Are there many 3rd party programs available? Any other recommendations? My main use would be Diary (view by Month or Week - not day by day), + an address book."

David Kramer tells Nick:

"I just went through the tortuous decision of choosing between the Psion and HP. I chose the HP. It was definitely the right decision for me, because it runs DOS, so I can write programs for it. Both units have their strengths and weaknesses. The Psion is a little smaller and lighter, the screen is slightly bigger, and the top-of-the-line Psion is about \$250 less than the top-of-the-line HP. However, the top-of-the-line HP comes with 2 megabytes of memory compared to Psion's 512 kilobytes (one fourth as much as the HP). Psion's OS offers a pretty GUI, cooler looking case, and two proprietary card slots for more memory, modems, etc. The HP offers full DOS compatibility (it's an XT-class computer with DOS 5.0 built in), HP ruggedness, and one industry-standard PMCMIA type II slot. The Psion can output touchtone from its speakers so it can dial your telephone, and the HP has an infrared port that can communicate with a printer, or learn IR signals from any other device and control it.

Both palmtops connect easily to the desktop, but in order to answer the question you didn't ask, I need to know what computer you're using and what software, if any, you use now for appointments and diary. Both programs can share data with certain other programs, but the HP's "connectivity pack" comes with most of the programs from the palmtop for your computer. So you can run the same exact programs (appointments, phone numbers, etc) on your desktop and your palmtop.

Both units can run third party programs. The Psion has its own interpretive programming language, OPL. You can write your own programs in it. There is a C developer's kit, but it is very expensive. There are several programs available on cards that you insert, like financial packages, bibles, dictionaries, etc. OPL programs don't take up much space, since they are interpreted, not compiled. The HP can run almost any IBM-compatible software that can fit in storage, and use CGA-resolution or lower.

I suggest you look at section 7 of this forum, and the HPHAND forum. Beware that both sides are extremely opinionated to the point of snottiness and bigotry, but the Psion folks are much worse. If you have any questions, feel free to ask. I've already done all the research, so there's no sense in both of us going through it. Tell me more about your needs and limitations."

On the subject of PDA's (Personal Digital Assistants), which use a touch-sensitive screen and writing stylus as a means of data entry, John Davis tells us:

"Ever since the new pen based PDA's came out I've been fascinated by them. I have been thinking about buying one and am real close to doing so. For several reasons from what I read I seem to like the Z-PDA better than the Newton. For one, I'm from a PC and Windows background and just feel I will get along better with Geos than the Newton OS. Also, over the years I have probably purchased 6-7 Tandy PC's so have a natural inclination to products sold by them. I have a couple of questions.

- 1) It seems lately that I have not heard much about the Z-PDA. I would hate to purchase an orphan. Do you all see this as a continuing product? It's not going to be dropped the day after I purchase it, is it?

2) I have 2 main uses planned for the Z-PDA. First, I write a daily column that I publish on the Internet. I'd like to use the Z-PDA to gather notes, etc. for my column. So I would be writing in a bunch of stuff, then moving it over to my PC for proofing, etc. How suitable would the Z-PDA be for this use? Am I going to be real discouraged with the HWR?

3) My other main use is as a front-end data capture for Quicken (this is what really gives the Z-PDA the edge over the Newton IMO). I use Quicken heavily; BUT I use the DOS version. I thought I had read that the Z-PDA version of Quicken can only be uploaded to the Windows version of Quicken. Please tell me this isn't so.

Any answers would be greatly appreciated. I'm a little concerned because I have periodically checked in here to see what was going on with the Z-PDA and as of late this place appears to be dead. I hope this isn't due to a lack of interest for the product."

Sysop Marty Mankins tells John:

"To answer your questions,

1. The Z-PDA is not orphaned, but the market demand is low now. It's part of a new product line selling slump. This is a good time to buy cause prices are low.

2. The Z-PDA would work great for what you want to do. Notes about an article are what it's best at doing. Now, actually doing the article on the Z-PDA is not something I'd recommend.

3. Pocket Quicken is perfect for keeping your accounts in order. You will need Quicken for Windows 3.0 or newer for data transfer. No other version that I know of is supported. You may want to contact Intuit and see if a future DOS version will support Pocket Quicken.

PalmComputing sells a \$20 package for tranferring Quicken files."

Ed Ballot tells us:

"Geoworks has released a shareware version of its desktop OS in the IBMAPP forum. It is called GeoPublish because the apps included in it are for editing/publishing (GeoWrite, Text Editor, Scrap Book). Most interesting is that it includes the ability to link (via the file linking feature) to the Zoomer and PT-9000. This makes the remote machine (from both the desktop and the PDA side) look like another disk drive, so one can easily move files back and forth.

I would encourage everyone to try it out. Besides being located in the IBMAPP forum (Desktop Pub library), it is also available at ftp sites (like oak.oakland.edu and tech-ftp.geoworks.com) and various BBS and shareware vendors. The entire system is a couple of megabytes, so downloading with a 2400 bps modem may be painful. for those who don't want to spend the time downloading, you can order GeoPublish on disk for \$9.95 at 1-800-238-5885 (or email to INTERNET:orders@geoworks.com)."

Well folks, there's lots more that I could include in the column this week, but space (and time) is short so I'll end here. If you want more, more, more, why not log on and do some browsing around? There's only

one thing you need to know, and that's to always listen to what they are saying when...

PEOPLE ARE TALKING

> STRreport CONFIDENTIAL "Rumors Tidbits Predictions Observations Tips"

- New York City, NY V.34/V.FAST 28.8kbps standard is CLOSE!

YES .. that's right, the Official V.34/V.FAST 28.8kbps standard was just approved last Thursday in Geneva by the ITU-TSS! Well ...almost. The process is not quite done yet, although it did clear what is probably the last major hurdle.

The vote that took place last week was the vote of the study group to send it before the entire ITU-T for ratification. Ballots should be mailed out sometime in July to the entire ITU-T. Keep in mind these votes are not cast by the industry, but rather by the governments. The U.S. vote is cast by the U.S. State Department.

It is expected that these ballots should be back in and the standard fully ratified and blessed sometime in September or October.

- Los Angeles, CA CANON Intros NEW Laser Printer!

Canon Computer Systems, Inc. (CCSI) today introduced its new, high end offering in a growing line of value-driven laser printers for the Small Office and Home Office market (SOHO) - the LBP 860 Business Laser Printer. The LBP-860 offers an upgradeable, high performance printing solution in an affordable package that brings true, 600 dots per inch (dpi) output, 8-page per minute (ppm) speed and industry-standard PCL5e compatibility to the small office environment.

> ONLINE TRADE SHOW!! STR Spotlight

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